



University
of Glasgow

Mullen, J-M (2013) *The relationship between empathy and Self-Management Support in general practice consultations in areas of high and low socio-economic deprivation*. PhD thesis.

<http://theses.gla.ac.uk/4533/>

Copyright and moral rights for this thesis are retained by the author

A copy can be downloaded for personal non-commercial research or study, without prior permission or charge

This thesis cannot be reproduced or quoted extensively from without first obtaining permission in writing from the Author

The content must not be changed in any way or sold commercially in any format or medium without the formal permission of the Author

When referring to this work, full bibliographic details including the author, title, awarding institution and date of the thesis must be given

**The relationship between empathy and
Self-Management Support in general practice
consultations in areas of high and low
socio-economic deprivation.**

Jenna-Marie Mullen, BSc(Hons) MBPsS

Submitted in fulfilment of the requirements for
the Degree of Doctor of Philosophy with the University of Glasgow

Academic Unit of General Practice and Primary Care
College of Medical, Veterinary and Life Sciences

August 2013

DECLARATION

I declare the contents of this thesis to be all my own work.

The following presentations have been made based on material contained in this thesis:

Conferences:

Measuring empathy according to the Verona Emotional Sequences of Cues and Concerns (Verona-Codes-CC); a videoed consultation approach, ADEGS Annual Conference – PowerPoint Presentation, Landmark Hotel Dundee, January 2012.

Comparing patients' perception of GPs empathy with objective measurement of emotional Cues and responses using the Verona Emotional Sequences of Cues and Concerns (Verona-CoDES-CC) in areas of high and low deprivation in Scotland, SSPC Annual Conference- Poster Presentation, Hilton Hotel Glasgow, April 2012.

Abstracts accepted for upcoming conferences:

Patients' perceptions of GPs' empathy and objective measurement of emotional concerns, cues and responses in consultations in areas of high and low deprivation in Scotland, SAPC Annual Conference- Poster Presentation, SECC Glasgow, October 2012.

Self-Management Support in general practices consultations in affluent and deprived areas, SAPC Annual Conference- Poster Presentation, SECC Glasgow, October 2012.

ABSTRACT

Aim

Empathy is widely regarded as an important attribute of healthcare professionals, and has been linked to higher patient satisfaction, enablement, and some health outcomes. The ‘mechanism of action’ of clinical empathy is not well understood. An ‘effect model’ of empathic communication in the clinical encounter has been proposed by Neumann et al (2009). In this model, clinician empathy is seen as having a positive effect in encouraging patients to tell more about their symptoms and concerns (for example, by picking up on emotional cues and responding in an encouraging way). This can result in ‘affective-oriented effects’ (such as the patient feeling listened to and understood) or ‘cognitive/action-oriented effects’ which include the clinician collecting more detailed information (medical and psychosocial), gaining a more accurate perception of the problem (and possible diagnosis) and enhanced understanding and responses to the patients’ individual needs. Such responses may include Self-Management Support of various kinds, which help enable the patients to better manage their condition(s), leading to improved outcomes.

Recent Government policy in Scotland has focused on Self-Management Support and Anticipatory Care as key priorities in primary care, in response to the rise in chronic disease and health inequalities. However, the amount and type of Self-Management Support and Anticipatory Care that occurs in routine consultations in primary care is not known, nor their relationship with empathy and patient enablement. Thus the ‘effect model’ of empathy as proposed by Neumann, which postulates a relationship between empathy, Self-Management Support, and outcomes in the consultation remains largely theoretical.

The aim of this thesis was to examine the relationships between patients’ perceptions of doctors’ empathy, patient enablement, health outcomes and the amount and the type of Self-Management Support (including Anticipatory Care) in general practice consultations. Due to the wide health inequalities that exist in Scotland, and the continuing operation of the ‘inverse care law’, a comparison was made between consultations in areas of high or

low socio-economic deprivation to establish whether the relationships varied by deprivation.

The thesis had the following research objectives;

- To assess the nature, type and frequency of Self-Management Support (including Anticipatory Care) in general practice consultations in high and low deprivation groups
- To determine whether patients' perceptions of GP empathy is related to Self-Management Support (including Anticipatory Care) in consultations in high and low deprivation groups
- To explore the effects of Self-Management Support (including Anticipatory Care) on patient enablement and health outcomes in high and low deprivation groups
- To assess patients' perception of empathy in terms of the nature, type, and frequency of emotional Cues and responses by GPs rated as high or low in empathy by their patients in consultations in high and low deprivation groups

Methods

The research objectives were investigated by a secondary analysis of data collected between 2006-2008 by Mercer and colleagues in the Section of General Practice and Primary Care at the University of Glasgow. These data were collected as part of a research project in general practice in areas of high and low deprivation funded by the Chief Scientist Office of the Scottish Government. The research produced database, includes 659 videoed baseline consultations, with patient rated experience measures, including the Consultation and Relational Empathy (CARE) Measure, the Patient Enablement Instrument (PEI) and outcomes (self-reported symptom change and well-being) at 1 month post-consultation available on 499 patients.

An observer-rated method of assessing Self-Management Support and Anticipatory Care was sought from the literature to answer objectives 1-3. However, there were a lack of

validated observer-rated tools available that were specifically designed to measure these constructs. As such, the Davis Observation Code was identified as a validated system of coding primary care consultations across a broad range of consultation components which included items deemed to relate to Self-Management Support and Anticipatory Care. The process of selecting the Davis coding system, and the rejection of alternative coding systems is discussed in detail in Chapter 5. The Davis coding system was also considered feasible given the large size of the database. Self-Management Support and Anticipatory Care were then measured by using combinations of seven codes deemed relevant to Self-Management Support within the consultation setting.

Four additional codes were added to the Davis system, in order to include tasks relevant to UK general practice consultations. These additional codes were not part of Self-Management Support or Anticipatory Care but were added to achieve a complete coding system of activities within the consultations.

The Verona coding system measured emotional cues, concerns and health provider responses that were observed within the consultations. As such, this system was used to answer objective 4. The choice of this system reflected a desire to use an observer-rated measure to help ‘validate’ the patient-rated empathy measure (the CARE Measure) in terms of the first part of the Neumann et al (2009) model, i.e. eliciting concerns and symptoms, separate from the cognitive/action oriented effects relating to Self-Management Support.

Results

Reliability of the objective coding systems

Preliminary work was carried out on both coding systems in order to establish reliability in the application of the codes. This was a lengthy process, involving several cycles of coding by two coders (the author and one of her supervisors) but resulted in acceptably high levels of inter-rater reliability ($\kappa > 0.7$ for the Davis coding system, and > 0.9 for the Verona coding system).

Objective 1: The nature, type and frequency of Self-Management Support (including Anticipatory Care) in general practice consultations in high and low deprivation groups

In both the high and low deprivation groups, time was predominantly allocated to gaining information about the patient's complaint, conducting physical examinations and planning treatment.

There was no difference observed in the amount of Self-Management Support overall in the consultations between high and low deprivation areas. However, there were significant differences in the nature, type and frequency of certain aspects of Self-Management Support, with significantly more Anticipatory Care in the consultations in the high deprivation areas.

The results also showed that patients in the high deprivation group tended to experience a more direct biomedical focused consultation that featured practical tasks such as physical examinations and discussion of substance misuse. In the low deprivation group, a biopsychosocial approach was more common, which involved more time spent within the consultation discussing treatment effects, compliance or discussing how previous interventions had impacted on the patient's health. For both groups, little time was allocated to gathering family information or counselling, answering patient questions or discussing health knowledge.

Objective 2: Patients' perception of GP empathy and relationship with Self-Management Support (including Anticipatory Care) in consultations in high and low deprivation areas.

The relationship between empathy and Self-Management Support was explored using the Consultation and Relational Empathy Measure (CARE) and the Davis observation code respectively. Potential confounding variables were taken into account. Patients' perceptions of their GP's empathy were significantly associated with Self-Management Support in the low deprivation group, but not the high deprivation group. Anticipatory Care was not associated with patients' perceptions of their GP's empathy in either high or low deprivation groups.

Objective 3: Effects of Self-Management Support (including Anticipatory Care) on patient enablement and health outcomes in high and low deprivation groups

The effects of Self-Management Support on patient enablement and health outcomes were explored. Patient Enablement was not related to the amount of Self-Management Support

or Anticipatory Care in the consultations in either high or low deprivation settings, nor were Davis codes associated with enablement in the high deprivation group. However, enablement was positively and significantly associated with discussions around patient questions in the low deprivation group. The amount of time spent on procedures (such as taking blood) had a negative association with enablement in the low deprivation group.

Changes in health outcome in terms of symptom severity at 1 month post-consultation were not related to overall Self-Management Support in the consultation in either high or low deprivation settings. However, Anticipatory Care in the consultation was related positively with symptom improvement in the low deprivation group but not high deprivation group.

Changes in health outcome in terms of well-being improvement at 1 month post-consultation were not related to overall Self-Management Support or Anticipatory Care in the consultation in either high or low deprivation settings.

Objective 4: Patients' perception of empathy in terms of the nature, type, and frequency of emotional Cues and responses by GPs rated as high or low in empathy by their patients in consultations in high and low deprivation groups

Patient perception of GP empathy within the consultation, as measured by the CARE Measure, was compared with the type and frequency of patients' emotional cues and concerns and GP responses using the Verona coding system. Because of the lengthy process that this coding system entails, coding was undertaken on a sub-group of the full data set. 112 consultations were coded, from the highest and lowest empathy GPs, (based on GPs' mean CARE Measure scores) in the dataset, in both high and low deprivation areas.

The results showed that in areas of high deprivation, patients who consulted GPs with high empathy (high CARE measure scores) expressed more emotional cues and concerns and the GPs had more encouraging responses, compared with consultations with practitioners with low patient ratings of empathy. These associations between Verona codes and GP empathy were not observed in consultations in low deprivation areas. These findings suggest that the way in which patients judge their GPs to be empathic or not differ according to deprivation level.

Conclusions

The thesis findings are based on one of the largest databases of general practice consultation content linked to health outcomes in the world. New findings on the relationships between patients' perceptions of doctors' empathy, patient enablement, health outcomes and the amount and the type of Self-Management Support (including Anticipatory Care) in general practice consultations have been identified.

Objective measurement of Self-Management Support showed similar amounts of Self-Management Support overall in consultations in high or low deprivation areas, though more Anticipatory Care (involving more health promotion) was observed in the high deprivation group, possibly as a reactive response to the higher levels of unhealthy behaviours (such as smoking and substance misuse) in deprived areas. However, the amount of Self-Management Support shown in consultations in both deprivation areas was generally low.

In agreement with theoretical cognitive/action-oriented effects of the Neumann model, perceived GP empathy was positively related to the amount of Self-Management Support in the consultations in the low deprivation areas. However, this was not found in the high deprivation consultations, suggesting that patients judge their GPs empathy on different criteria depending on their deprivation levels and that affect-oriented effects may be more important in consultations in deprived areas. Symptom improvement was related to the amount of Anticipatory Care in the low deprivation group, which would again fit with the cognitive/action-oriented effects of the Neumann model. However, in the high deprivation group such an association was not found.

Collectively, the results of this thesis indicate that the relationships between perceived GP empathy, Self-Management Support (including Anticipatory Care), patient enablement, and health outcomes are complex and differ depending on the deprivation level of the patient. The findings provide some support for the utility of the 'effect model' of empathy but mainly in the low deprivation setting. These findings have implications for how consultations are best conducted in high or low deprivation areas, and possibly for medical student and GP training in communication and consultation skills.

ACKNOWLEDGEMENT

I would like to acknowledge and thank my supervisors, Professor Stewart Mercer and Professor Graham Watt as well as Professor Kate O'Donnell in her role as Postgraduate Convenor for their advice, expertise and guidance throughout the thesis process. I would also like to extend my gratitude to my examiners Professor Margaret Maxwell and Professor Jill Morrison for their insightful and helpful comments and advice on my thesis.

Also, thank you to: Dr Tom Blakeman (University of Manchester), Prof Pete Bower (University of Manchester), Prof Sally Wyke (University of Glasgow), Prof Brian McKinstry (University of Edinburgh), Prof Gerry Humphris (University of St Andrew's), Prof Paul Little (University of Southampton), Prof Jane Gunn (University of Melbourne), Dr John Furler (University of Melbourne), Prof Debra Roter (USA), and Prof Liz Bayliss (USA) for their advice on coding in the consultation.

I would also like to thank research assistant Maria Higgins for her guidance and generosity of time whenever encouragement and advice were required. My gratitude is also extended to Isabel Jones, Isa Bakr and the staff in at the University of Glasgow's General Practice department as well as Margaret Ashton and the staff at the Medical Faculty's Graduate school for their approachability, kindness and assistance throughout the 3 year process.

I also want to thank the University of Glasgow for providing the funding for my research and Professor Gerry Humphries of St Andrew's University for his enthusiasm, support and expertise during the 'Verona' stages of my thesis.

I am also grateful to the patients and practitioners of the General Practices in the Greater Glasgow and Clyde area that agreed to take part in the previous research study that allowed me to produce my research. Although I did not get to meet them, I appreciate the time they gave to the previous research team and I am grateful for the opportunity to learn from them and their experiences.

My gratitude is also extended to my University of Glasgow tutoring colleagues, family and friends who have supported and encouraged my journey through the PhD. In particular my parents, Linda and Joe who have been a constant source of support – emotional, moral and of course financial, my ‘Nana’ Elizabeth for her encouragement and faith, my brother Paul for making me stubborn and competitive enough to achieve my goal, and my fiancé Richard for his love, patience and confidence in me and my ambitions.

I dedicate the thesis to my family. All that I am, or ever hope to be, I owe to them.

TABLE OF CONTENTS

DECLARATION	2
ABSTRACT	3
ACKNOWLEDGEMENT	9
TABLE OF CONTENTS	11
LIST OF TABLES	16
LIST OF FIGURES	20
GLOSSARY	22
Chapter 1: Background and Project Overview	23
1.1 Summary	23
1.1.1 What is known about the importance of the consultation to health outcomes?.....	24
1.1.1 Gaps in knowledge in research on empathy and Self-Management Support in the consultation	31
1.2 Conceptual Framework Of the Thesis.....	32
1.3 Aims and Objectives	33
1.3.1 An overview of the content of the thesis.....	34
Chapter 2: Literature Search	36
2.1 Summary	36
2.2 Search Criteria.....	38
Search 1: Empathy and General Practice Consultations	39
Search 2: Patient-Centred Care and Patient Physician Relations.....	39
Search 3: Self-Management Support and Anticipatory Care.....	40
Chapter 3: Introduction	42
3.1 Summary	42
3.2 Empathy	42
The role of empathy in the clinical setting.....	43
Measuring empathy and enablement.....	45
Enhancing empathy and enablement.....	48
Discussion of Empathy	49
3.3 SELF-MANAGEMENT SUPPORT.....	50
Definitions of Self-Management Support and related concepts	50
Self- Care	52
Self-Management Support; the Chronic Care Model.....	56
How does Self-Management Support work?	57
How can Self-Management Support be measured?	62
How can Self-Management Support be enhanced?	63
Summary of Self-Management Support.....	64
Conclusion	66
Chapter 4: Context	69
4.1 Summary	69
4.2 Deprivation.....	70
4.3 Data	72
Sample frame of Practices – Greater Glasgow and Clyde.....	72
Participating Practices	72
Participating GPs.....	73

Participating Patients.....	74
4.1 Follow Up	76
4.2 A comparison of responders and non-responders	76
4.3 Summary of previous study	79
Video Consultations	81
Context of previous study to current study	81
4.4 Conclusions	82
Chapter 5: Methods	84
5.1 Summary	84
5.2 Videod Primary Care consultations.....	84
5.3 Coding scheme selection process.....	84
5.3.1 The Davis Observation Code (DOC) Rationale.....	94
5.3.2 The Verona-CoDES-CC Rationale	98
5.3.3 The Wider Context.....	101
5.4 Transcription Work	101
The Jefferson Notation Technique	101
Transcription Process	102
Inter-Rater Reliability; Cohen and Davis Methods.....	102
5.5 Analysis of key confounders.....	104
Chapter 6: Methodology; the learning, coding and Inter-Rater Reliability process for the Davis Observation Code (DOC)	107
6.1 Summary	107
Learning to use and developing the DOC	107
6.2 Inter-Rater Reliability cycles and results	107
6.3 Theoretical background of the Davis Observation Code (DOC).....	108
The context of the Davis Observation Code (DOC) and Self-Management Support within the current study.....	110
Inter-Rater Reliability overview	111
6.4 Inter-Rater Reliability; Summary.....	123
6.5 Intra-Rater Reliability; Summary of cycles and results	123
Intra-Rater Reliability; Attempt 1	123
Intra-Rater Reliability; Attempt 2	124
Intra-Rater Reliability; Attempt 3	124
Intra-Rater Reliability; Summary.....	125
6.6 Inter-Rater Reliability in previous Davis Literature	125
6.7 Conclusions	125
Chapter 7: Applying the Davis Observation Code (DOC) to the content of consultations in general practices serving low and high deprivation areas.....	127
7.1 Summary	127
7.2 Introduction	128
7.3 Coding System	128
Additional Codes.....	128
Sampling Methods	131
Coding procedures	131
Self-Management Support and Anticipatory Care.....	131
7.4 Results	133
Prevalence of observed activities within consultations.....	133
Observations of Individual Davis Codes within consultations	135
Observations of Self-Management Support & Anticipatory Care within consultations.....	141

7.5	Referral Data	141
7.6	Discussion	142
7.6.1	Davis in the current study	143
7.6.2	Additional Codes in the current study.....	145
7.6.3	Referral Data	146
7.7	Davis use in previous studies	148
7.8	Strengths and Weaknesses	149
7.9	Implications for practice, policy and future research.....	150
Chapter 8: Davis and empathy; the relationship between empathy and Self- Management Support in consultations in groups of high and low deprivation151		
8.1	Summary	151
8.2	Coding system.....	152
8.3	Results; Individual Davis Codes	152
	Davis Codes; Self-Management Support & Anticipatory Care	154
	Analysis of key confounders.....	154
	Analysis of key confounders; Self-Management & Anticipatory Care	157
8.4	Summary of Findings	157
8.5	Discussion	159
	Individual Davis codes	159
	Self-Management Support and Anticipatory Care.....	159
8.6	Conclusions	161
8.6.1	Relation to previous Davis work.....	161
	Practice Policy and Future Research.....	161
Chapter 9: Davis, Empathy & Outcomes; exploring the effect of Self-Management Support on patient enablement and health outcomes in consultations in high and low deprivation groups163		
9.1	Summary	163
9.2	Methods.....	163
9.3	Patient Enablement Results;.....	164
	Individual Davis Codes	164
9.4	Patient Enablement Index (PEI); Self-Management Support & Anticipatory Care	166
9.5	Analysis of key confounders.....	166
9.6	Analysis of key confounders; Self-Management & Anticipatory Care	169
9.7	Outcome Results (MYMOP severity of symptom).....	170
	MYMOP severity of symptoms; Change in profile score.....	170
	Individual Davis Codes	170
9.8	Outcomes; Self-Management Support & Anticipatory Care	172
9.9	Analysis of key confounders.....	173
9.10	Analysis of confounders; Self-Management & Anticipatory Care	175
9.11	Outcome Results (changes in well-being).....	176
	MYMOP outcomes; Change in profile score.....	176
	Individual Davis Codes	177
9.12	Well-being; Self-Management Support & Anticipatory Care	178
9.13	Analysis of key confounders.....	178
9.14	Analysis of key confounders; Self-Management & Anticipatory Care	180
9.15	Summary of Findings	180
	Patient Enablement.....	181
	Change in symptom severity	181
	Change in well-being	181

9.16 Discussion	182
Chapter 10: Methodology; the learning, coding and Inter-Rater Reliability process for the Verona-CoDES-CC.....	184
10.1 Summary	184
10.2 Data	184
10.3 Inter-Rater Reliability cycles and results	185
10.4 Theoretical background of Verona.....	185
10.5 Inter-Rater Reliability overview	188
10.6 Inter-Rater Reliability; Sampling Method	189
10.7 Inter-Rater Reliability; Data Set 1.....	189
Sample Characteristics	189
Sample Results	190
10.8 Inter-Rater Reliability; Data Set 2.....	192
Sample Characteristics	192
Sample Results	193
10.9 Inter-Rater Reliability in previous Verona Literature	195
10.10 Conclusions	195
Chapter 11: Verona-CoDES-CC; the emotional cues and responses in general practice consultations in areas of high and low deprivation	197
11.1 Summary	197
11.2 Introduction	197
Verona use in previous studies.....	198
11.3 Recap of the Verona-CoDES-CC	199
Selection of consultation for analysis	203
Sampling Frame and Method	203
11.4 Results	204
Study practices	204
Characteristics of patients in the selected videoed consultations	205
Characteristics of the high and low CARE groups; pre consultations	207
11.5 Comparison of Verona scores between GPs with high and low CARE scores in high and low deprivation groups.....	212
Health Provider Responses at Levels 1 and 2	215
Health Provider Responses at Level 3	217
11.6 Discussion	219
Summary of Findings	219
11.7 Strengths and Weaknesses	221
11.8 Main findings and relationship to published literature	222
Cues 222	
Concerns.....	224
Health Provider Responses	224
11.9 Conclusions	226
Implications for practice/policy/future research	229
Chapter 12: General Discussion	231
12.1 Introduction	231
12.2 Summary of the thesis in the context of current literature	231
Thesis process	231
Main Findings	232
12.2.1 Additional Findings.....	233
Communication and Health Outcomes	240
Ecological Fallacies	241

Coding measure design	242
Videoed Consultations origin.....	242
Empathy: dangerous or desirable?	243
Self-Management Support (including Anticipatory Care) in practice	245
12.3 Evaluation of the study.....	247
Opportunities.....	247
Context	248
Reflections.....	249
Use of secondary data	250
Merits 251	
Pitfalls 251	
Value of new consultation data	251
Coding methods and measures	252
Multiple Testing	254
12.5.2 Multi-level Modelling	255
12.6 Conclusions and Recommendations	256
12.7 Implications for practice policy & future research	256
Policy & Practice.....	256
Future Research.....	258
References	260
Appendix A – Year 1 Project Activity Gantt Chart.....	278
Appendix B – Year 2 Project Activity Gantt Chart.....	279
Appendix C – Year 3 Project Activity Gantt Chart.....	280
Appendix D – Pre and Post Consultation Patient Questionnaire	281
Appendix E – The CARE Measure (Mercer et al. 2004)	290
Appendix F – A comparison of responders and non-responders	291
Appendix G – Analysis of key confounders; Davis FDS.....	297
Davis Code Totals	298
Individual Codes	299
Summary of Findings	307
Appendix H – Inter-Rater Reliability; Verona Data sets 1 and 2 in more detail.....	309
Appendix I – Analysis of key confounders; Verona FDS	313
Appendix J – Correlation Matrix of Davis Codes.....	318
Appendix K – Correlations of Davis Codes	319
Appendix L – Davis & Verona Data in more detail.....	320
Summary of the justification of the Verona and Davis coding system selection...320	
Davis Data.....	321
Sample Characteristics Implications	321
Sample Characteristics Implications	322
Characteristics of the participating patients	323

LIST OF TABLES

Table 1: High and Low Deprivation General Practice sample	73
Table 2: Participant numbers, age and gender across the high and low deprivation groups (percentages).	76
Table 3: Comparison of responding and non-responding patients to follow up questionnaire	77
Table 4: Demographics of participating patients from the previous study	80
Table 5: Comparison of coding system considered, tested and reasons for rejection.....	91
Table 6: Operational definitions from the Davis Observation Code (DOC)	109
Table 7: IRR Data set 1	113
Table 8: IRR Data set 2.....	115
Table 9: IRR Kappa Data set 3	117
Table 10: Operational Definitions for Davis Observation Coding and Definitions of additional codes.....	120
Table 11: IRR Data set 1 - additional subcategories.....	121
Table 12: IRR Data set 2 - additional subcategories.....	122
Table 13: IRR Data set 3 - additional subcategories.....	122
Table 14: Davis Recap of codes.....	129
Table 15: Additional and modified codes	130
Table 16: The percentages of consultations containing each Davis code	134
Table 17: Comparison of high and low deprivation groups for Health Promotion codes (percentages in brackets).....	135
Table 18: Comparison of means (SD) number of codes per consultation between the high and low deprivation groups.....	136
Table 19: Comparison of the mean (SD) number of additional codes between the high and low deprivation groups.....	138
Table 20: Analysis of confounders considered Davis codes in high and low deprivation groups.....	140
Table 21: Comparison of the mean (SD) high and low deprivation groups Self-Management Support & Anticipatory Care codes	141
Table 22: Number of referrals observed in each category between the high and low deprivation groups.....	142
Table 23: Correlation between (mean) CARE measures and Davis codes in consultations in low and high deprivation groups.....	153

Table 24: Comparison of Self-Management Support & Anticipatory Care between the high and low deprivation groups.....	154
Table 25: Analysis of confounders considered for Davis and Empathy coded data.....	156
Table 26: Analysis of confounders considered for each Davis and Empathy combined codes; Self-Management Support & Anticipatory Care	157
Table 27: Correlations between PEI (average item) scores and individual Davis codes in consultations in low and high deprivation areas (p values in brackets).....	165
Table 28: Correlations between patient enablement scores (PEI) and Self-Management Support/Anticipatory Care combination codes in consultations in low and high deprivation groups.....	166
Table 29: Analysis of confounders considered for each Davis code; Patient Enablement scores in consultations in low and high deprivation groups.	168
Table 30: Analysis of confounders considered for associations between Davis and combined codes – Self-Management Support & Anticipatory Care.....	169
Table 31: MYMOP severity of symptom; profile score at consultation and 1 month follow up.....	170
Table 32: Correlations between changes in symptom severity and individual Davis codes between consultations in high and low deprivation groups.	171
Table 33: Correlations between changes in symptom severity and Self-Management Support/Anticipatory Care in consultations between low and high deprivation groups....	173
Table 34: Analysis of confounders considered for each Davis code and changes in symptom severity	174
Table 35: Analysis of confounders considered for each Davis and empathy combined codes – Self-Management Support & Anticipatory Care and changes in symptom severity	175
Table 36: MYMOP well-being; profile score at consultation and 1 month follow up	176
Table 37: Correlations between changes in well-being and individual Davis codes in consultations.....	177
Table 38: Correlations between changes in well-being, Self-Management Support/Anticipatory Care and individual Davis codes in consultations in low and high deprivation groups.....	178
Table 39: Analysis of confounders considered for each Davis code; Well-being (changes in well-being)	179
Table 40: Analysis of confounders considered for each Davis and empathy combined codes; Self-Management Support & Anticipatory Care and changes in well-being.	180
Table 41: Verona-CoDES-CC system Cues Summary table	186

Table 42: IRR for Cues and Concerns by CARE measure groups (data set 1).....	190
Table 43: IRR of physical complaints Cues and Concerns in high and low deprivation groups for data set 1	191
Table 44: IRR of Health Provider Responses in high and low deprivation groups accounting for CARE measure scores (data set 1).....	191
Table 45: IRR of Cues and Concerns within mid CARE consultations (data set 2).....	193
Table 46: IRR for Cues and Concerns across areas by deprivation status (data set 2).....	194
Table 47: IRR of health provider response within the mid CARE group across the high and low deprivation groups (data set 2).....	194
Table 48: Descriptions of GP selection criteria	204
Table 49: Sampling of GPs and their practices	204
Table 50: Patient demographics for high and low deprivation patient groups across the high and low CARE groups.	205
Table 51: Health variables for high and low deprivation patient groups across the high and low CARE groups.	207
Table 52: Consultation characteristics prior to the consultation	208
Table 53: Consultation characteristics post consultation	210
Table 54: Comparison of Cues, Concerns and Health Provider Responses between the CARE measure groups by deprivation.....	212
Table 55: Comparison of Cues A-G responses between the CARE measure groups by deprivation.....	213
Table 56: Comparison of level 1 and 2 Health Provider Responses between the CARE groups in high and low deprivation groups.....	215
Table 57: Beta, p-values, odd's ratios and CI's of odd's rations of potential confounders for the high and low CARE groups by deprivation	218
Table 58: Patient demographics	291
Table 59: Health Variables.....	292
Table 60: Consultation characteristics pre consultation.....	293
Table 61: Consultation characteristics post consultation	295
Table 62: Beta, p-values, odd's ratios and CI's of odd's rations of models 1, 2, 2b and 2c potential confounders for the high and low deprivation groups.	298
Table 63: Beta, p-values, odd's ratios and CI's of odd's rations of model 1 potential confounders for the high and low deprivation groups.	300
Table 64: Beta, p-values, odd's ratios and CI's of odd's rations of model 2 potential confounders for the high and low deprivation groups.	302

Table 65:Beta, p-values, odd's ratios and CI's of odd's ratios of model 2b potential confounders for the high and low deprivation groups.	304
Table 66:Beta, p-values, odd's ratios and CI's of odd's ratios of model 2c potential confounders for the high and low deprivation groups.	306
Table 67: Cues IRR results Data set 1 A to G	309
Table 68: Cues IRR results Data set 2	310
Table 69: Health Provider Responses IRR results of Levels 1 and 2 for Data Sets 1 and 2.	311
Table 70: IRR results for overall Health Provider Responses by deprivation and CARE measure status	311
Table 71: Beta, p-values, odd's ratios and CI's of odd's ratios of potential confounders for the high and low CARE groups by deprivation.	314
Table 72: Beta, p-values, odd's ratios and CI's of odd's ratios of potential confounders for the high and low deprivation groups.....	315
Table 73: Beta, p-values, odd's ratios and CI's of odd's ratios of potential confounders for the high and low CARE groups by deprivation.	316
Table 74: Beta, p-values, odd's ratios and CI's of odd's ratios of potential confounders for the high and low CARE groups by deprivation.	316
Table 75: Correlation Matrix for each Davis code.....	318

LIST OF FIGURES

Figure 1: Adapted from Bower et al (2009)'s domains of communication in the consultation	25
Figure 2: Schematic model of the domains of communication in the consultation (Beck et al, 2002).....	28
Figure 3: Street et al (2009)'s model of direct and indirect pathways from communication to outcomes	28
Figure 4: Neumann et al's Effect model of empathic communication in the clinical encounter	30
Figure 5: Literature review inclusion and exclusion decision making process	37
Figure 6: Literature Search.....	38
Figure 7: Neumann et al's Effect model of empathic communication in the clinical encounter	44
Figure 8: Howie's Patient Enablement Instrument (Howie et al. 1999).....	48
Figure 9: The Department of Health's Self- Care Support and Self-care diagram.....	54
Figure 10: The Chronic Care Model (Grossman et al. 2004)	57
Figure 11: Glasgow's 5A's model of Self-Management Support (Glasgow et al. 2006)	59
Figure 12: Effect model of empathic communication and Self-Management Support (adapted from Neumann et al 2009).....	68
Figure 13: Flow Diagram showing the relationship of the Verona and Davis studies data to the previous study data.....	69
Figure 14: Revised adaptation of Neumann's effect model of empathic communication focusing on the role of the DAVIS coding system.	96
Figure 15: Revised adaptation of Neumann's effect model of empathic communication focusing on the role of the VERONA coding system.	100
Figure 16: Cohen's Kappa (Orlowski et al. 2010).....	103
Figure 17: Logistic Regression Diagram (McQueen and Knussen 2006)	104
Figure 18: Response model.....	104
Figure 19: Effect model of empathic communication and Self Management Support (revisited) (Neumann et al, 2009)	132
Figure 20: Comparison of Davis codes for the high and low deprivation patient groups .	137
Figure 21: Comparison of additional codes for the high and low deprivation patient groups	138
Figure 22: Verona-CoDES-CC, Coding Provider Responses (Del Piccolo et al. 2009)....	187

Figure 23: Flow diagram of data set 1	190
Figure 24: Flow Diagram of data set 2.....	193
Figure 25: Descriptions of Verona Cues and Concerns	200
Figure 26: Descriptions of Verona Non-Inviting Health Provider Responses.....	202
Figure 27: Descriptions of Verona Inviting Health Provider Responses	203
Figure 28: Comparison of Cues A to G for low and high deprivation groups across the high and low CARE groups	214
Figure 29: Comparison between levels 1 Health Provider Responses between the CARE measures by deprivation.....	216
Figure 30: Comparison of between level 1 health provider responses between the CARE measure groups by deprivation	216
Figure 31: Diagram of Emotional Labour adapted by Larson (Larson and Yao 2005) from Davis (Davis 1996)	237
Figure 32: Verona Health Provider Responses Levels 1 and 2.....	310

GLOSSARY

AC	Anticipatory Care
CARE	The consultation and relational empathy measure; which is a patient assessed measure of health professional's communication and empathy skills within consultations
Davis/DOC	Davis Observational Code
DF	Degrees of Freedom
FDS	Full data set
'Gau'n Yersel'	A Scottish term of encouragement; 'Go on yourself'.
HPR	Health Provider Response
IRR	Inter-Rater Reliability
MPCC	Moira Stewart 'Measure of Patient-Centred Communication', a six component measure of verbal communication within the consultations setting.
Multimorbidity	The occurrence of two or more chronic conditions
MYMOP	Measure Your Medical Outcome Profile
PEI	Patient Enablement Instrument
P-value	Probability of difference arising by chance
RIAS	Roter Interaction Analysis System, a validated coding tool used to measure consultations communication
SD	Standard Deviation
SIMD	Scottish Index of Multiple Deprivation
Self- Management Support	Self-Management Support
Verona	Verona coding definitions of Emotional Sequences for Cues and Concerns (Verona-CoDES-CC)

Chapter 1: Background and Project Overview

1.1 Summary

The consultation between patient and practitioner is a key activity of healthcare, when important decisions and actions are made by both parties. There has been a large amount of research carried out over the last 40 years on the consultation, much of this in general practice and primary care. The focus of this research has tended to be on various aspects of doctor-patient communication, and ‘patient-centeredness’ (defined in various ways). Most of this research has focused on the process of the consultation and immediate ‘outcomes’, such as patient satisfaction. Studies that relate an effect of the consultation (however assessed) to longer term health outcomes are scarce. Patient satisfaction has also become an important focus of policy makers, and patient questionnaires that give feedback on specific services within the NHS are now routinely used in clinical practice.

Approaches that encourage and support patient enablement and self-management are of growing importance and a key concern to patients, practitioners and policy-makers alike. The growing burden of chronic disease has increased interest in self-management, for example, as reflected in recent Scotland Government policies that have focused on Self-Management Support (Self- Management Support) and Anticipatory Care (AC) (The Scottish Government 2007; The Scottish Government 2008; The Scottish Government 2009; The Scottish Government 2000; The Scottish Government 2010; The Scottish Government 2010; The Scottish Government 2008; The Scottish Government 2010).

Self-Management relates to an individual’s ability to look after their own health care needs. Self- Management Support has been defined as “*the successful outcome of the person and all appropriate individuals and services working together to support him or her to deal with the very real implications of living the rest of their life with one or more long term condition*” (The Scottish Government 2009). Anticipatory Care is a less well defined concept, but can be viewed as a type of Self- Management Support which focuses more specifically on health promotion. In Scotland, one approach to Anticipatory Care (Keep Well)(Scottish Executive Health Department 2005) has been to target those at high risk of heart disease living in areas of high deprivation, in an attempt to narrow health inequalities. This type of health screening is often carried out at general practice level. Anticipatory Care has also been suggested as an important aspect of on-going serial

encounters between healthcare practitioners and patients, as an activity within the consultation that identifies and tries to prevent future problems.

General practice and primary care accounts for approximately 90% of NHS activity, and thus is a prime setting for enabling patients, promoting self-management and providing Anticipatory Care. General practice aims to provide care that is continuous, comprehensive, and co-ordinated, taking a holistic approach to needs based upon a philosophy of patient-centeredness (Howie et al. 2004). Relationships lie at the heart of such care, and empathy is considered as an essential component of the development and continuation of the therapeutic relationship (Reynolds and Scott 1999). Its utility may include knowledge of social factors, the ability to act appropriately according to them, and the ability to recognize emotional cues and to respond to them appropriately (Mercer et al. 2012). Empathy is important for enabling patients, for patient satisfaction, and to enhance health outcomes, either directly or indirectly (Neumann et al. 2009). However, the relationship between empathy and Self-Management Support is not well understood.

The literature that has informed the thesis on empathy and Self- Management Support including Anticipatory Care will be discussed throughout the thesis.

1.1.1 What is known about the importance of the consultation to health outcomes?

Research on the consultation in general

The consultation between patient and practitioner is a key activity of healthcare and there has been a large amount of research carried out over the last 40 years on the consultation, much of this in general practice and primary care (Howie, et al, 2004). Bower et al (2009) reviewed the literature on research into the consultation in general practice and found that the research tended to cluster around the following areas: psychodynamic, clinic-observational, socio-physiological, and sociological (Figure 1).

Bowers domains definitions

Psychodynamic

Research that draws on this perspective focuses on:

- Consultation is a deep psychological process
- Deep psychological understanding of patient and doctor
- Importance of emotion and personality, subjectivity, self-awareness
- The intrinsic therapeutic value of the relationship

Clinical-observational

Research that draws on this perspective focuses on:

- Patient-centredness as a key characteristic of the interaction, although the focus is on the GP
- Clinical method and professional behaviours (measurable technical micro skills,) that together constitute patient-centredness and “quality” care
- Bio psychosocial assessment, as a key element

Socio-psychological

Research that draws on this perspective focuses on:

- Patients knowledge, understanding, health literacy, health beliefs and explanatory models
- Relationship to lifestyle and behaviours

GP skill and technique in eliciting these characteristics of the patient

Sociological

Research that draws on this perspective focuses on:

- Consultation as a social process
- Reflects distribution of power and knowledge
- Includes wider structural and situational/contextual factors/constraints
- Professional identity and patient hood
- Socially constructed language and process/practice

Figure 1: Adapted from Bower et al (2009)'s domains of communication in the consultation

The focus of most of the research to date has tended to be on various aspects of doctor-patient communication, relationship and 'patient-centeredness'. Most of this research has focused on the process of the consultation and immediate 'outcomes' such as patient satisfaction (Mead & Bower, 2000). Studies that relate an effect of the consultation (however assessed) on longer term health outcomes are much less common (Griffin et al 2004).

The context of the research on the consultation over the last 40 years is best understood in terms of the 'journey' of general practice (as a discipline). Early work by McWhinney (1966) described the future of general practice in terms of four criteria (i) a unique field of action; (ii) its own skills; (iii) the ability to support research ; and (iv) control over postgraduate training. McWhinney (1966) postulated that based on these criteria, the evolution of general practice would lead to measurable 'skills' including "*the ability to elucidate undifferentiated clinical problems*" with an attitude of having "*an overriding interest in people before their diseases*". McWhinney also highlighted the need for the GP to consider the physical, psychological, and social components of their patient's health and illness, using this information to strengthen what they know about their patient and continue to build the patient practitioner relationship from the knowledge that has been obtained. The combination of these components, and considering the patient as a 'whole person', led to the widespread use of the term 'holism'. McWhinney suggested that the introduction of the concept of 'holism' into general practice represented a 'paradigm shift in medicine' away from the disease-centred biomedical model to a patient-centred alternative. 'Holism' also takes into account the patient's own priorities. Achieving this requires good communication skills, skills that not only consider patient-centred consulting but also the patient's participation in the consultation through shared decision making. Stott and Davis (1979) commented on this idea calling it "*the exceptional potential of every primary care consultation*" to address co-morbidity, offer health promotional and to negotiate health seeking behaviour with patients (Howie et al, 2004).

Building on the foundation of general practice established by McWhinney and others, Moira Stewart's research on patient-centred care in the consultation in general is currently highly influential in the field. Patient-centred care is a multi dimensional concept that is difficult to define and measure. In general, it is largely accepted as being the appropriate involvement of patient's in making decisions about their own health care (Howie et al, 2004). Stewart's writing on the concept of patient-centeredness aimed to address the significant challenge of finding measurable ways that patient-centred clinical practice can

bring benefit to patients. Stewart found that the majority of research into patient centred practice in consultation focused on coding and measuring the attributes of doctor behaviour, often through videoed or audio recorded clinical encounters. These coded consultations included codes for patients' ideas, concerns and expectations (Howie et al, 2004). Stewart's writing looked at studies on how patient-centred care can improve patient outcomes (Greenfield et al 1988; Kaplan et al, 1989; Kinmonth et al, 1998; Kindersley et al, 1999).

Stewart (2001) defines patient-centred care as being care which " (a) explores the patients' main reason for the visit, concerns, and need for information; (b) seeks an integrated understanding of the patients' world—that is, their whole person, emotional needs, and life issues; (c) finds common ground on what the problem is and mutually agrees on management; (d) enhances prevention and health promotion; and (e) enhances the continuing relationship between the patient and the doctor"(page 444).

Research on patient-centred care has been linked to patient outcomes such as patient satisfaction (Henbest et al, 1990), patient health and the efficiency of health care (Stewart et al, 2000). Other studies have shown that patient-centred care leads to fewer diagnostic tests and referrals (Bertakis et al, 2011; Epstein et al 2005).

A good patient-practitioner relationship is often developed over a period of time, built on rapport, knowledge gathering, empathic communication and the ability to be respond to challenges (Beck et al, 2002) (Figure 2). Challenges to the patient-practitioner relationship can be seen in the form of mismatched perspectives, noncompliance, or conflicting health beliefs between the patient and their doctor. In order to recover the relationship in times of conflict, the patient and practitioner must aim to reach a 'common ground' solution to the patients health concern (Bird and Cohen-Cole, 1990). Bird and Cohen-Cole (1990) describe the functions of shared decision making through 3 key aspects of the interaction between a practitioner and their patient; data gathering to understand the patient (gathering information), development of rapport and responding to the patient's emotions (developing a therapeutic relationship), and patient education and behavioural management (decision making and management).

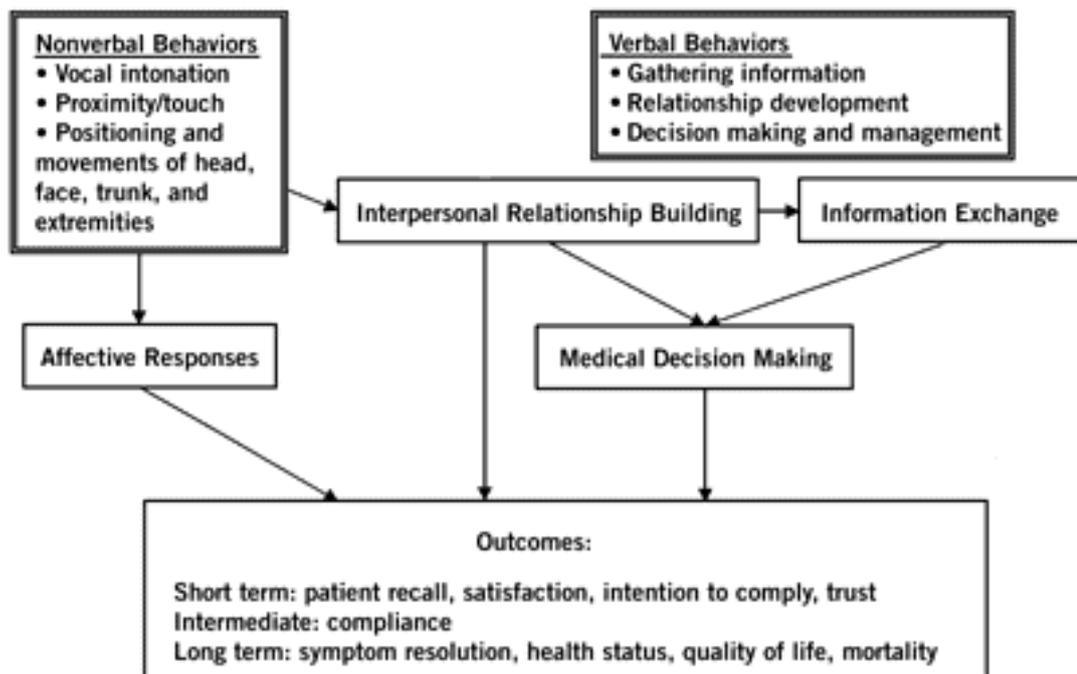


Figure 2: Schematic model of the domains of communication in the consultation (Beck et al, 2002)

Exactly how communication in the consultation influences health outcomes is not well understood, but Street et al (2009) in a useful review of the literature in this area, suggested that both direct and indirect effects of communication in the consultation may operate to influence longer term health outcomes, as shown in Figure 3.

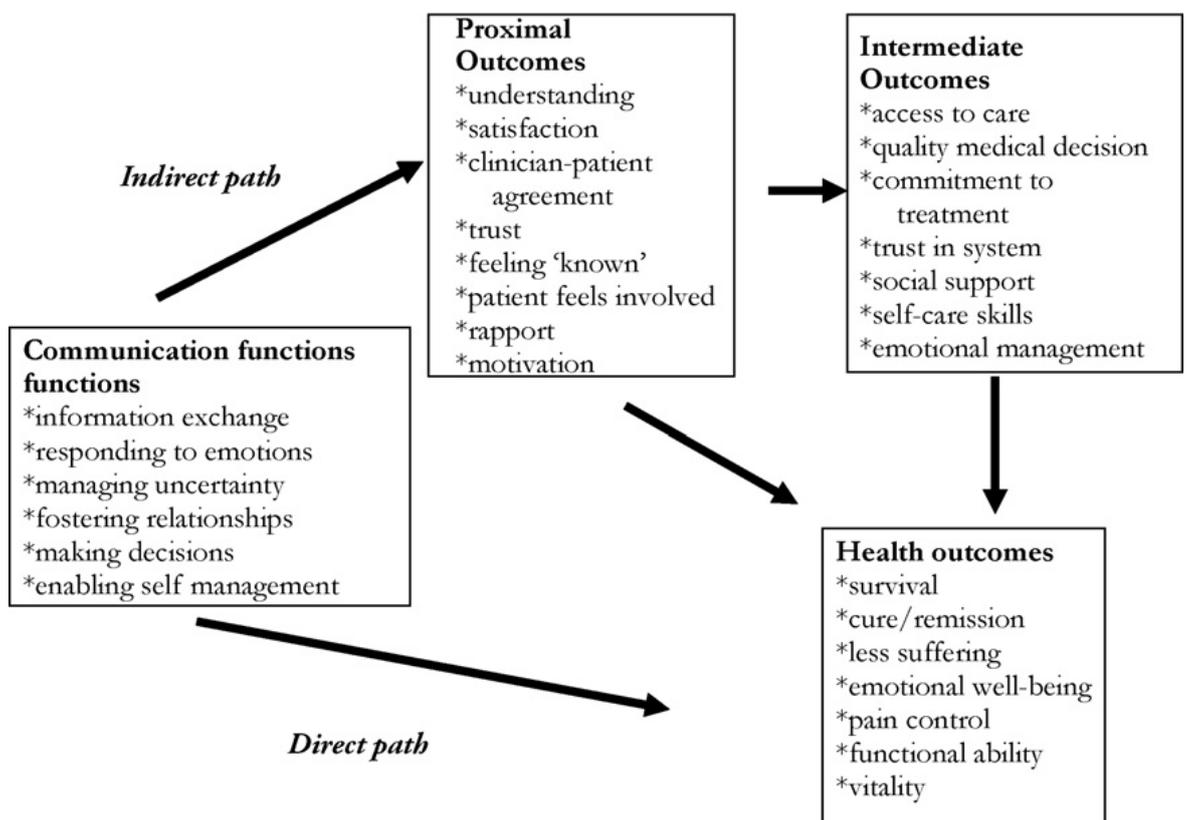


Figure 3: Street et al (2009)'s model of direct and indirect pathways from communication to outcomes

Within the consultation, communication functions that may have a direct effect could be a response to emotions in an empathic, validating way so that the patient feels listened to and valued, which may then directly enhance emotion-related outcomes such as hope and self-worth. However, Street et al (2009) argue that in most cases, communication will affect health in an indirect or mediated way, via proximal and intermediate outcomes. For example, clear explanations and expressions of support by the doctor could lead to greater patient trust and understanding of treatment options (proximal outcomes) which may lead to more commitment to therapy and self-care (intermediate outcomes) and then to better health (health outcomes). Street et al (2009) conclude by recommending that future research should hypothesise pathways connecting communication to health outcomes and select measures specific to those pathways whenever possible.

Street et al's (2009) work on the functioning of direct and indirect pathways of communication links well with the work of Neumann et al's (2009) model of empathy (Figure 4).

Research on empathy in the consultation

Empathy is widely regarded as an important attribute of healthcare professionals, and research has shown the importance of clinical empathy in achieving higher patient satisfaction, enablement, and improvement in some health outcomes (Mercer and Reynolds 1992, Neumann et al 2009, Mercer et al 2012). However, the 'mechanism of action' of clinical empathy is not well understood. An 'effect model' of empathic communication in the clinical encounter has been proposed by Neumann et al (2009) which is shown below (and further explained in Chapter 4).

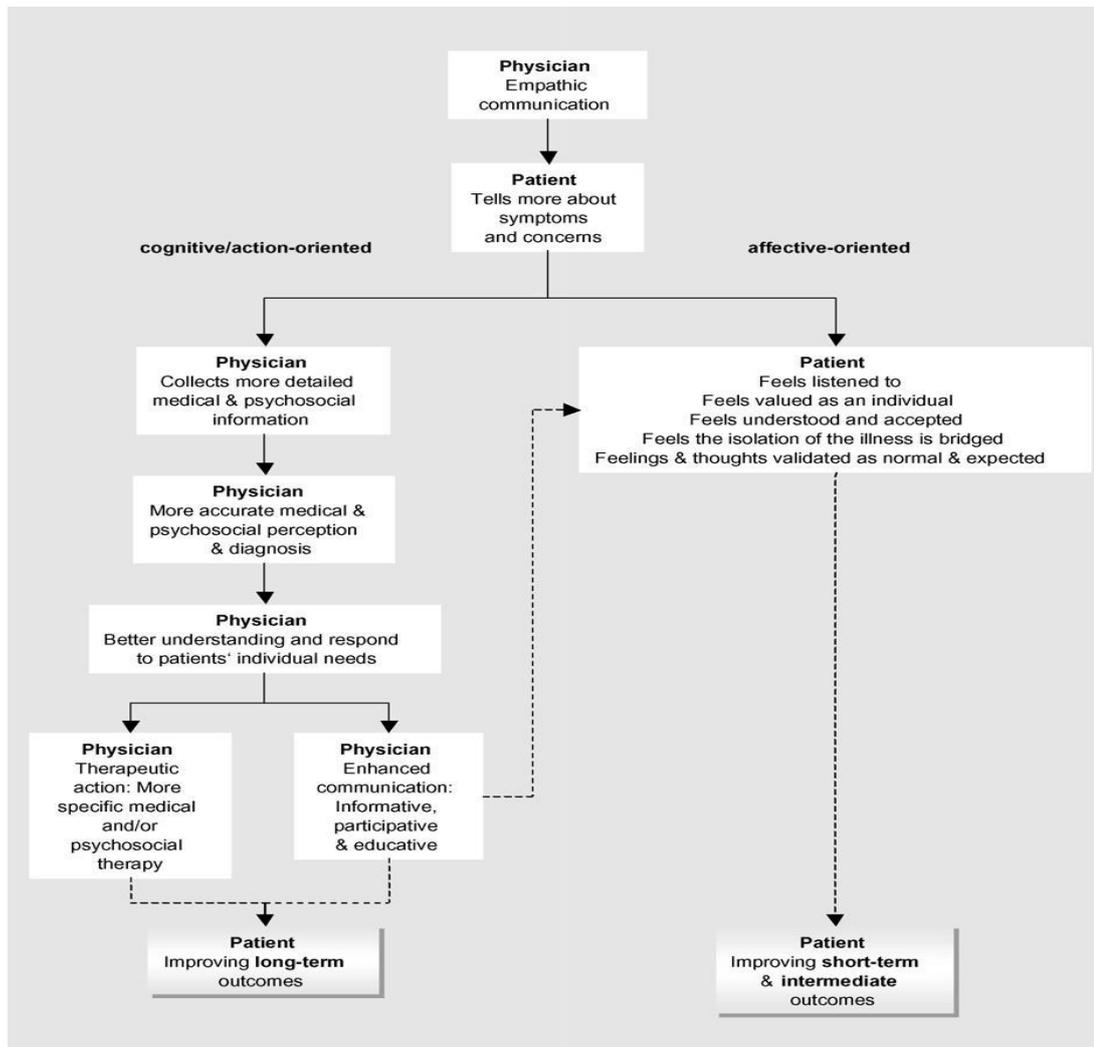


Figure 4: Neumann et al's Effect model of empathic communication in the clinical encounter

In this model, clinician empathy is seen as having a positive effect in encouraging patients to tell more about their symptoms and concerns (for example by picking up on emotional cues and responding in an encouraging way). This can result in 'affective-oriented effects' such as the patient feeling listened to and understood (similar to the 'direct effects path' in the Street et al 2009 model) or 'cognitive/action-oriented effects' (similar to the 'indirect path' of Street et al 2009) which include the clinician collecting more detailed information (medical and psychosocial), gaining a more accurate perception of the problem (and possible diagnosis) and an enhanced understanding and response to the patients' individual needs. Such a response stemming from the cognitive/action-oriented level may include a new treatment (such as a drug prescription), a specific therapeutic approach (such as CBT) and/or Self-Management Support of various kinds, which would help enable the patients to manage their condition(s) better. The end result in the longer term of these various interventions would be improved health outcomes.

1.1.1 Gaps in knowledge in research on empathy and Self-Management Support in the consultation

Recent Government policy in Scotland has focused on Self-Management Support and Anticipatory Care as key priorities in primary care, as a response to the rise in chronic disease and health inequalities. However, the amount and type of Self-Management Support and Anticipatory Care that occurs in routine consultations in primary care is not well known, nor their relationship with empathy and patient enablement. Thus the 'effect model' of empathy (shown above) which postulates a relationship between empathy and Self-Management Support in the consultation, and outcomes is largely theoretical with regard to these links. Self-Management Support, remains poorly defined, despite being widely discussed within the health literature alongside terms such as Anticipatory Care. In recent years, Self-Management Support has become the focus of Scottish Government policies aimed at addressing health inequalities through the promotion of services delivered at a local community and primary care setting (The NHS Choices 2012; Department of Health 2005, 2007, 2009).

Much of the focus on Self-Management Support has been on community-based and lay led approaches, such as the Expert Patient Programme based on the work of Lorig (Lorig et al 2003). There has been much less research focus on the delivery of Self-Management Support within the primary care consultation (Blakeman et al 2010). It has been suggested that within primary care consultations, Self-Management Support by the healthcare practitioner should help patients monitor their condition(s) and deal with flare ups, improve lifestyle behaviours, adjust medication, and access community Self-Management Support (Department of Health 2005a; Riegel et al 2009). Patients believe that GPs are an important potential source of Self-Management Support (Department of Health 2005b) but many barriers to the delivery of Self-Management Support within GP consultations have been identified (Blakeman et al 2010). From the few studies conducted, the amount of Self-Management Support that takes place within primary care consultations appears to be very limited (Johansson and Akerlind 2005; MacDonald et al 2008; Blakeman et al 2010). How this varies by patient characteristics (such as deprivation) is not known.

1.2 Conceptual Framework Of the Thesis

The conceptual framework of the thesis stemmed from Neumann’s model (Neumann et al. 2009) shown in Figure 5. Neumann’s model describes how empathy within the clinical encounter can achieve positive outcomes. In Neumann’s model, the cognitive/action oriented effects are the postulated pathway for longer term outcomes. This includes, but is not limited to, Self-Management Support within the encounter, resulting in better long-term outcomes. In the modified version of this model shown below in Figure 5, the author has simplified the original model in order to make the proposed links between empathy, Self-Management Support, and outcomes more explicit.

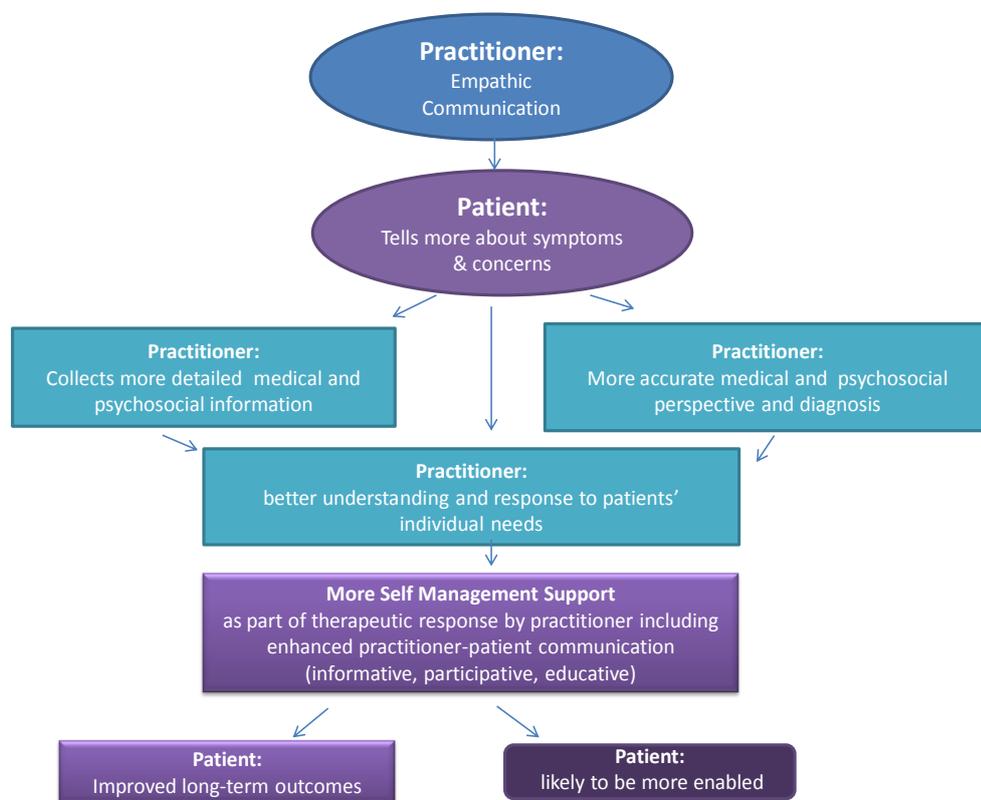


Figure 5: Effect model of empathic communication and Self-Management Support (adapted from Neumann et al 2009).

In this adapted model, it can be perceived that clinician empathy has a positive effect in encouraging patients to disclose more about their symptoms and concerns (for example, by picking up on emotional cues and responding in an encouraging way). In the context of Self-Management Support, empathic engagement leads to ‘cognitive/action-oriented effects’, which include the clinician collecting more detailed information (medical and psychosocial), gaining a more accurate perception of the problem (and possible diagnosis) and an enhanced understanding and response to the patients’ individual needs. This leads

to Self-Management Support of various kinds, which would help enable patients and aids them in better managing their condition(s). The end result in the longer term would be improved health outcomes.

1.3 Aims and Objectives

Based on the above conceptual model shown in Figure 5, the aim of this PhD project is:

- To examine the relationships between patients' perceptions of doctors' empathy, patient enablement, the amount and the type of Self-Management Support (including Anticipatory Care) in general practice consultations and the relationships between these factors, comparing consultations in groups of high or low socio-economic deprivation in Scotland.

The objectives are:

The thesis had the following research objectives;

- To assess the nature, type and frequency of Self-Management Support (including Anticipatory Care) in general practice consultations in high and low deprivation groups
- To determine whether patients' perceptions of GP empathy is related to Self-Management Support (including Anticipatory Care) in consultations in high and low deprivation groups
- To explore the effects of Self-Management Support (including Anticipatory Care) on patient enablement and health outcomes in high and low deprivation groups
- To assess patients' perception of empathy in terms of the nature, type, and frequency of emotional Cues and responses by GPs rated as high or low in empathy by their patients in consultations in high and low deprivation groups

1.3.1 An overview of the content of the thesis

The literature review in chapters 2 and 3 summarises what is currently known about empathy, Self-Management Support and Anticipatory Care in the context of primary care consultations. Chapter 3 also places the research knowledge within the context of Scottish and UK government health policies. A key finding of this literature review was the limited research to date on the amount and type of Self-Management Support and Anticipatory Care within routine general practice consultation.

The research carried out in this thesis thus explored the delivery of Self-Management Support and Anticipatory Care within routine general practice consultation. This was possible due to the existence of a large dataset previously collected by the lead supervisor, Professor Stewart Mercer, as part of a study on empathy, enablement and outcomes funded by the Chief Scientist Office. Details and the context of this previous work are described in Chapter 4. An important aspect of this dataset was that it was collected in routine general practice in areas of high and low socio-economic deprivation. This allowed the author to not only explore empathy and Self-Management Support within GP consultations, but to do so within the context of different patient populations with regard to deprivation.

Chapter 5 describes the validated tools that were considered for use in coding the videos of the consultations in terms of Self-Management Support and Anticipatory Care and the choice of using the Davis Observation Coding system. The Davis measure was chosen as it provided not only numerical information on the amount and type of Self-Management Support and Anticipatory Care that was provided within the consultations but also measured what other activities were taking place in the consultation in addition (or instead of) Self-Management Support. This provided a comprehensive system for understanding the context of what goes on in consultations including, but not limited to, Self-Management Support and Anticipatory Care. Chapter 5 also describes the choice of the VERONA system as an objective measure of basic aspects of empathy in the consultation.

Chapter 6 describes the methodology of using the Davis coding system and the work undertaken to ensure high levels of reliability in the coding. Chapter 7 describes the results of the Davis coding in terms of the amount and type of Self-Management Support and Anticipatory Care. Chapter 8 analyses the relationship between patients' perceptions of the GPs empathy and Self-Management Support and Anticipatory Care. Chapter 9 goes on to

examine the links between Self-Management Support and Anticipatory Care and health outcomes.

Chapter 10 describes the VERONA methodology used to assess emotional cues and concerns and practitioner responses, and Chapter 11 analyses the relationship between these and patients' perceptions of GP empathy. Chapter 12 then draws together the findings and places them in context within a general discussion

Chapter 2: Literature Search

2.1 Summary

A literature review was carried out on the three main topics relating to the aim of the thesis, namely empathy, Self-Management Support, and Anticipatory Care, to place them in their intellectual, historical and theoretical context. In total, 1010 articles and 8 policy documents were reviewed. All of the policy documents are from a Scottish or UK government source. The decision to use articles that used a primary care setting was made in order to limit the literature to that reflecting a medical setting as close to the study data as possible, for accurate comparisons to be drawn.

The review of the literature took the form of a comprehensive assessment of publications relevant to the research questions. The reviewed literature yielding over 1000 publications included journal articles and current government policy documents. The abstracts were checked against a pre-determined criterion of eligibility and relevance. A substantially smaller sub set of the publications touched on the subject content but did not however, provide a significant contribution for inclusion in the thesis. The detailed search terms of the publications can be found on thesis in pages 38-41 and the decision making process for inclusion and exclusion can be seen in the diagram below (Figure 5).

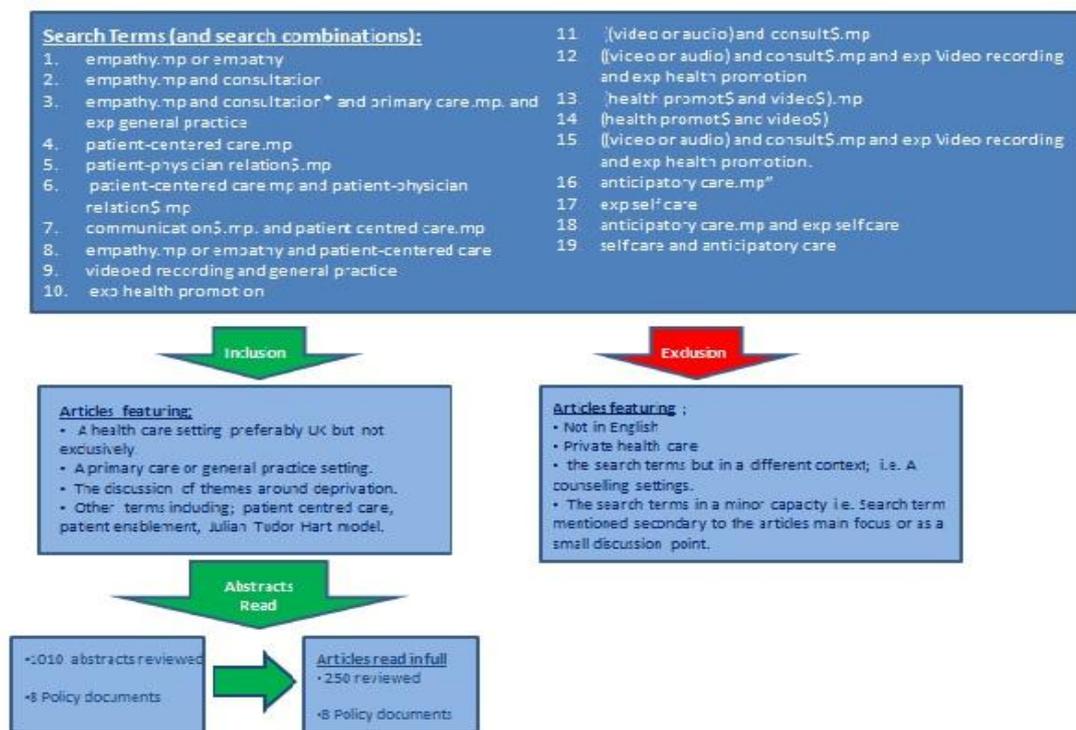


Figure 5: Literature review inclusion and exclusion decision making process

Each article was considered for its relevance to the research objectives. This process involved an in-depth reading of the articles in order to select to select papers that were meaningful and added to the learning objectives of the thesis. The articles were compared allowing for the key messages to be summarized, and considered in terms of what was known about the topic and gaps in the knowledge that the thesis aimed to address.

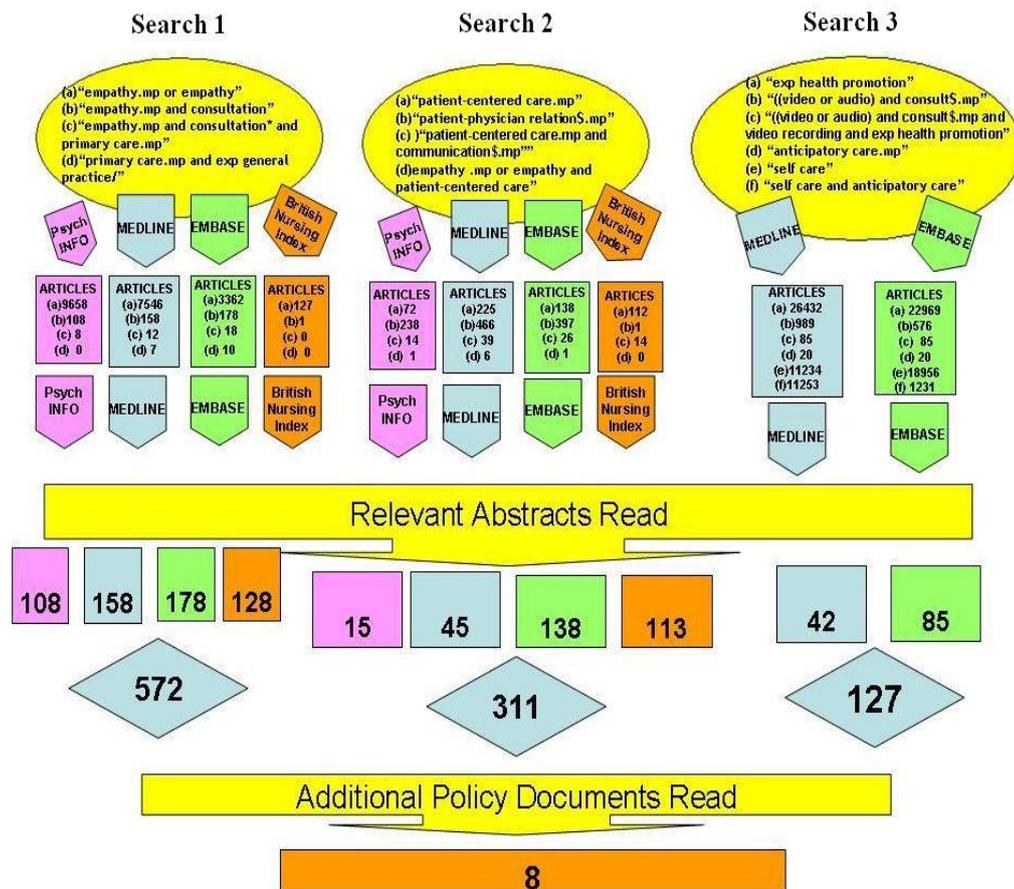


Figure 6: Literature Search

2.2 Search Criteria

A detailed literature search was carried out using the following electronic databases: PsycINFO (via Ovid interface 1987 to December week 1 2009); MEDLINE (via Ovid 1996 to November week 3 2009); EMBASE (via Ovid 1996 to 2009 week 49); British Nursing Index (via Ovid of 1994 to November 2009).

Figure 6 summarises the search findings. The figures in the blue diamond represent the number of abstracts read, and the number of policy documents are in the final orange box. This literature review highlighted gaps and problems in previous research and narrowed the search focus to make it relevant to general practice consultations that took account of the patient practitioner relationship in relation to the three topics of empathy, Self-Management Support and Anticipatory Care.

Search 1: Empathy and General Practice Consultations

An initial search strategy was undertaken to gain an overview of the literature available under the key and mesh terms “empathy.mp.or empathy”. The search results through PsycINFO on the 05/12/09 produced 9658 available articles and “empathy.mp and consultation*” which narrowed the articles available to 108. Also, the terms “empathy.mp and consultation* and primary care.mp” produced 8 articles. No articles were found on the search terms “primary care.mp and exp general practice/”. From these 108 articles, the abstracts were reviewed to determine the relevance of their content to the current research.

This process was repeated in MEDLINE on 05/12/09, which produced 7546 articles, (“empathy.mp.or empathy”). The key terms “empathy.mp and consultation*” were searched which produced 158 responses, with “empathy.mp and consultation* and primary care.mp.” resulting in 12 articles and a further 7 articles yielded from the search “primary care.mp and exp general practice/”.

EMBASE produced 3362 articles (“empathy.mp.or empathy”) and 178 articles looking at empathy within a consultation setting. The search was narrowed again to look at empathy within a general practice setting, producing 18 articles. 10 articles were also found under the search terms “primary care.mp and exp general practice/”.

This search was repeated within the British Nursing Index, which producing 127 articles on “empathy.mp.or empathy” and 1 additional article on “empathy.mp and consultation*”. There were no articles found set within general practice consultations.

From this review process, literature was selected that focused on empathy and general practice or primary care consultations, as well as papers that defined empathy within a medical context. Literature that focused on surgical procedures and counselling settings was not included. However, hospital outpatient appointments were included. This resulted in 572 articles for review.

Search 2: Patient-Centred Care and Patient Physician Relations

Further search strategies searched on patient-centred care and patient-physician relations as well as communication were carried out on 07/12/09. The search using key and mesh terms

within PsycINFO (“patient-centred care.mp”) produced 72 articles and the terms “patient-physician relation\$.mp” produced a further 238 articles. Other terms searched were “communication\$.mp” and patient centred care.mp”, which produced 14 articles, and the terms “empathy.mp.or empathy and patient-centred care”, for which 1 article was found.

MEDLINE was used to search the terms “patient-centred care.mp”, which produced 225 articles and “patient-physician relation\$.mp” produced 466 articles. No results were found under the terms “patient-centred care.mp and patient-physician relation\$.mp”. However, searching for the terms “communication\$.mp. and patient centred care.mp” resulted in 39 articles. The terms “empathy .mp or empathy and patient centred care” also produced 6 articles.

EMBASE produced 138 articles and 397 articles looking at patient-physician relations and patient-centred care. Further searches under the terms “communication\$.mp. and patient centred care.mp” produced 26 articles, while “empathy.mp or empathy and patient-centred care” resulted in 1 further article.

These searches were repeated within the British Nursing Index, which produced 112 articles and 1 article on patient physician relations. However, 14 articles were found under the communication and patient-centred care search. No articles were found under the search terms “empathy.mp or empathy and patient-centred care”.

Search 3: Self-Management Support and Anticipatory Care

Searches were carried out on the terms Self-Management Support and Anticipatory Care on 11/11/09. Searches were also conducted on related terms, such as video recorded data and consultations.

The key words and mesh terms searched on EMBASE were “exp health promotion”, which produced 22969 articles. The terms “((video or audio) and consult\$.mp)” produced 576 articles this number was reduced when searched alongside the terms “video recording and exp health promotion” resulting in 85 articles. Other terms searched were “anticipatory care.mp” which produced 20 articles, and “exp self care”, which produced 18956 articles. The search criteria combined with “self care and anticipatory care” then limited to between the years of 2000 to 2009 rendering 1231 results.

As for MEDLINE, it produced 26432 articles for the term “exp health promotion”. The terms “((video or audio) and consult\$.mp)” produced 989 articles while the terms “((video or audio) and consult\$.mp and exp Video recording and exp health promotion)” produced 85 results. The terms “anticipatory care.mp” produced 20 articles and “self care” produced 11234 articles. Finally “self care and anticipatory care” produced 11253 articles.

From this review process, literature which focused on health promotion and videoed consultation, as well as related topics such as self-care, were retained and their abstracts reviewed. After the removal of duplicates, this left a total of 42 articles.

Finally, searches were undertaken to identify relevant literature which is not currently available in published journals. This included conference reports, studies, and government policies. This search identified a further 8 pieces of relevant material.

Chapter 3: Introduction

3.1 Summary

This chapter outlines the three main topics of the thesis: empathy and Self-Management Support (including Anticipatory Care). It provides information on key theories, articles and government documents that were sourced to provide rationale and context to the thesis's aims and research questions. Details of the fundamental points taken from the literature that relate to the thesis's objectives are also discussed.

The term empathy is defined both in terms of its dictionary definition and how it is applied within the clinical context. The key models of communication within the clinical context are then discussed alongside the benefits of good communication within general practice, such as improved patient enablement, development of the patient practitioner relationship, and ultimately assisting Self-Management Support in primary care.

Self-Management Support strategies are also explored in association with literature on Anticipatory Care. The definitions and use of Self-Management Support are explored in terms of current Scottish Government policies and models of shared roles and responsibilities that both patients and practitioners' can become involved in. This chapter also discussed the term Anticipatory Care within the literature, as a term often associated with Self-Management and Self-Management Support. Information on how Anticipatory Care can be measured and enhanced within general practice is also discussed.

3.2 Empathy

Empathy has its origin in the German word *Einfühlung* or "feeling into" (Vischer 1873). Lipps used the term *Einfühlung* as a standard term in psychology and, thereafter, Tichener (Tichener 1915) translated Lipp's term *Einfühlung* by coining the word empathy in English based on the Greek *empathēin* (ἐμπάθεια).

The Oxford English Dictionary defines empathy as "the power of projecting one's personality into (and so fully comprehending) the object of contemplation" (The Oxford English Dictionary 1989).

Further definitions for the term empathy have been provided by Reynolds et al (Reynolds and Scott 1999) who considered empathy as an essential component of the development and continuation of the therapeutic relationship that within the clinical context involves the ability to:

- understand the patient's situation, perspective and feelings (and their attached meanings);
- to communicate that understanding and check its accuracy; and
- to act on that understanding with the patient in a helpful (therapeutic) way (Reynolds 2000).

Morse et al (Morse et al. 1992) suggest that empathy has emotive, cognitive and behavioural components. Emotive empathy refers to the subjective perception of another person's intrinsic feelings (Rogers 1961), whereas cognitive empathy refers to perspective taking (Ackermann 1996). The behavioural component of empathy refers to empathic understanding, which is fed-back to the individual in order to check the accuracy of the receiver's understanding (Morse et al. 1992), as well as the therapeutic actions that may ensue (Reynolds 2000). All 3 components of Morse's (Morse et al. 1992) theory (like that of Reynolds et al's (Mercer and Reynolds 2002)) are present within the context of healthcare. Within the consultation, the physician must perceive the patient's point of view and attached emotions, and communicate this perspective back to the patient to check its accuracy, as well as use it to make a treatment plan that acknowledges the patient's viewpoint.

The role of empathy in the clinical setting

Empathy within the clinical context tends to focus on the patient- practitioner relationship, and thus the quality of engagement and alliance in the encounter, and can range from the most basic human tendency to seek human connection through to the complexities of effective verbal and non-verbal communication (Neumann et al. 2009). This relationship allows both parties to gain knowledge of each other's relational roles as well as an understanding of supplementary support systems such as families, friends and colleagues.

'Clinical empathy' can therefore act to enable the patient and achieve various positive effects, such as improving the clinician's access to diagnostic information, allowing the

patient to request information and learn from the clinician's knowledge, and improving the accuracy and choice of treatment options and therapies (Neumann et al 2009). Other known effects of empathy within the clinical setting are higher patient satisfaction (Mercer and Watt 2007; Mercer et al. 2007; Little et al. 2001), better compliance with treatment (Mercer et al. 2005; Mercer and Howie 2006), more patient enablement (Mercer et al. 2002) and improvement in some health outcomes (Rogers 1961; Mercer and Reynolds 1992).

Neumann et al (Neumann et al. 2009) proposed a model that aimed to clarify how empathetic communication within the clinical encounter can improve patient outcomes. This model is an expansion of a previous study by Squire (Squier 1990) involving the 'model of empathic understanding and adherence to treatment regimes'.

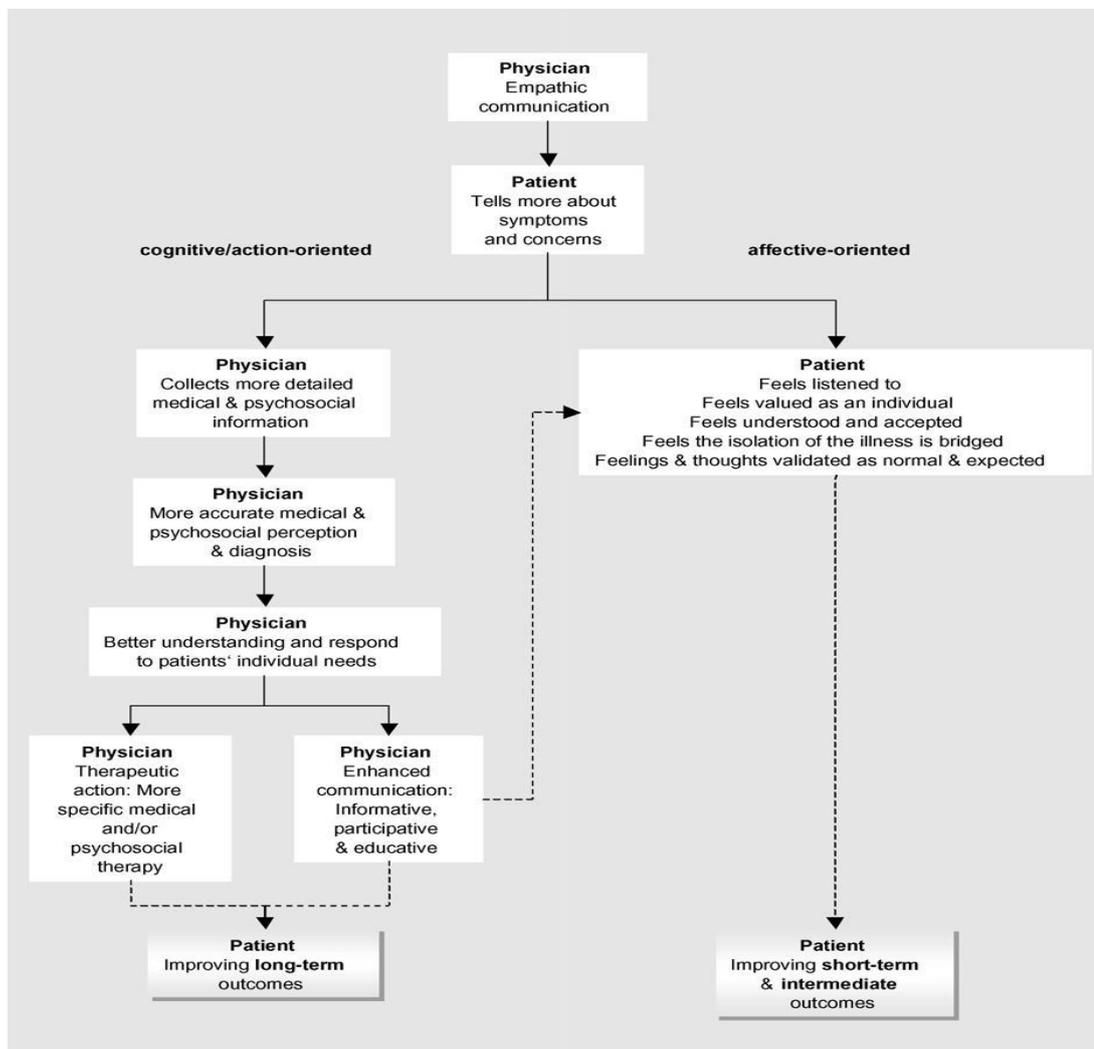


Figure 7: Neumann et al's Effect model of empathic communication in the clinical encounter

Neumann et al's (Neumann et al. 2009) model describes how empathy within the clinical encounter can achieve various positive effects for the patient. This is achieved by the clinician obtaining important information (Figure 7) that leads to a more accurate medical and psychosocial understanding, which in turn can lead to more accurate diagnosis. Neumann et al's (Neumann et al. 2009) model presents direct (affective-oriented) and indirect (cognitive-action oriented) effects of empathetic communication.

Such direct and indirect effects of empathic communication within a therapeutic relationship could include the use of Self-Management Support within the consultation. This promotion of self-management in the patient, could, in turn, influence outcomes. Given that empathy is crucial for patient enablement (Mercer et al. 2012), it would seem reasonable to hypothesise, from Neumann's model, that empathic physicians may promote more Self-Management Support within consultations. However, such a link is not established in the published literature.

Measuring empathy and enablement

A variety of measures of clinical empathy have been developed including observer-rated, patient-rated (Truax and Carcuff 1967), and therapist-rated. Mercer et al (Bertakis and Azari 2005; Mercer et al. 2005; Mercer et al. 2004) have developed and validated a patient-rated measure called the Consultation and Relational Empathy (CARE) Measure, which is being widely used in Scotland and elsewhere (Appendix E or www.gla.ac.uk/departments/generalpractice/caremeasure.htm).

This measure was developed in both high and low deprivation areas in Scotland, and is thus relevant and acceptable across the socio-economic spectrum^a. The items in the CARE Measure were considered important in everyday consultations in high and low deprivation settings by both doctors and patients.

Mercer and Howie (Mercer and Howie 2006) demonstrated in a sample of over 3,000 general practice patients in high and low deprivation settings that empathy as measured by the CARE Measure was positively related to patient enablement (PEI), knowing the doctor

^a The definitions and use of deprivation within the thesis is discussed on page 70.

well, and consultation length. Recent further analysis of this dataset has shown that full enablement never occurs without empathy (Mercer et al. 2012). Patients reported empathy and humanness to be a key attribute of a ‘good doctor’ (Mercer and Reynolds 2002; Mercer and Howie 2006). The research which measured empathy using the CARE measure has shown it to be a well validated tool; however, there have been no comparisons of patient’s perceptions of empathy with an observer rated measure of empathy within the literature.

Another well-known measure of empathy in medicine and health professionals is the Jefferson Scale of Physician Empathy (Jefferson 2004), which is a 20-item instrument of psychometric analyses answered by the patients in a 7-point Likert-type scale. This empathy scale, which is widely used in health research, includes 17 positive factor structure coefficients and 3 negatives factor structure coefficients, which are reversed scored. The items in the scale were decided using factor analysis of 45 potential items. The 20 items that remain are those that scored the highest factor structure coefficient (above 0.40). The highest score of all was recorded on the factor: “Empathy is an important therapeutic factor in medical treatment” (Jefferson 2004).

The Jefferson Scale of Physician Empathy (Jefferson 2004) aims to measure empathetic qualities and tendencies among health professionals. However, the authors themselves point out that the Jefferson scale does not provide any method of analysing behavioural manifestations of empathy among practising physicians with reference to the patient-practitioner relationship. The author also highlights the debate of how to judge empathy and other humanistic qualities, pointing to literature that suggests the patient should be the final judge (Wooliscroft et al. 2004); however, critics have argued that this would be difficult and not always appropriate (Hojat et al. 2001).

3.2.1.1 Patient Enablement Instrument

Patient enablement often features in literature which discusses empathy in a clinical setting. Enablement in the literature is defined as the extent to which a patient is capable of understanding and coping with his or her health issues (Howie et al 1999). It is a term that has been closely aligned over time with empowerment and has been widely measured in general practice consultation as a health outcome.

One of the more commonly cited measures of enablement in the clinical context is the Patient Enablement Instrument (PEI). The PEI is a measure of the patient's enablement as an immediate outcome of the consultation (Howie et al. 1999). The PEI was developed as an outcome measure for quality of consultation and is widely used in general practice as a quality measure related to, yet distinct from, patient satisfaction (Howie et al. 1998). The PEI asks the patient six questions on how to rate the extent to which their most recent consultation has increased their ability to understand and cope with their illness, cope with their life, their ability to stay healthy, their confidence about their health and their ability to help themselves (Price et al. 2006).

Empathy has been reported as being essential factor of Patient Enablement (Mercer et al 2012). However, the components of empathy and other aspects of the consultation that can enhance patient enablement are not well understood. Little et al (Little et al. 2001) found an association between health promotion as perceived by the patient and patient enablement. This association had a positive effect on patient-reported health outcomes. However, this was based on patient-reported measures of health promotion not observer-related measures. Patient Enablement and empathy are conceptualised in the literature as skills that can facilitate favourable health outcome such as improved well-being (Hojat, 2009) and patient satisfaction (Neumann et al, 2009; Mercer and Watt, 2007). These skills can be employed to engage the patient, leading to the provision of diagnostic information (Howie et al, 1999) that through time and continuity of care may lead to a patient-practitioner relationship that ultimately enables the patient to manage some of their own health care or self-manage their health with the support of the practice team (The Scottish Government, 2009).

HOWIE PATIENT ENABLEMENT INSTRUMENT

As a result of your visit to the doctor today,
do you feel you are...

	MUCH BETTER	BETTER	SAME OR LESS	NOT APPLICABLE
Able to cope with life	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Able to understand your illness	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Able to cope with your illness	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Able to keep yourself healthy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	MUCH MORE	MORE	SAME OR LESS	NOT APPLICABLE
Confident about your health	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Able to help yourself	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Scoring: Much better/more = 2
 Better/more = 1
 Same or less = 0
 Maximum score = 12.

Figure 8: Howie's Patient Enablement Instrument (Howie et al. 1999)

Enhancing empathy and enablement

Empathy within general practice consultations can be used to enhance communication and enablement between practitioners and patients, especially in complex consultations (Neumann et al. 2009) concentrated in areas of high deprivation (Mercer and Watt 2007), where patients present with multiple problems relating to poorer health, more psychological problems, and a higher rate of multiple morbidity, yet receive shorter consultations^b.

In these complex consultations, enablement was lower in high deprivation than low deprivation areas, and GP stress higher (Mercer and Watt 2007). In subsequent work in an

^b High Deprivation areas refers to part of the population living in part of Scotland that are considered to experience the highest levels of deprivation compared with the overall population surveyed. This definition is explore in more detail on page 70.

area of extreme deprivation, Mercer et al (Mercer et al. 2007) found that the provision of longer consultations (in a planned approach) led to improvements in patient enablement and reductions in GP stress.

One study that considers the complexities of general practice consultations is Mercer and Watt's (2007) work on the inverse care law in general practice consultations. The study collected questionnaire data on 3044 patients across 26 general practices serving the most and least deprived areas of the West of Scotland. The questionnaire measured socioeconomic factors alongside demographic information, health variables and range of quality of care variables. The findings of their study showed that patients in the most deprived areas consulted their GP with a greater number of chronic or long term and psychological health concerns. Despite the greater need in the most deprived areas, access to care was significantly lower and consultations were generally shorter than their least deprived patient counterparts. Patient enablement was also measured and found to be lower in deprived areas for patients with complex problems. Enablement was also found to be related to perceived GP empathy and severity of deprivation. The study by Mercer and Watt (2007) may not, of course, be representative of all UK general practices or different regions within the UK.

Hojat (Hojat 2009) also associated patient-reported empathy in clinical care with positive patient outcomes such as satisfaction and compliance, as well as benefits for health care professionals such as well-being and lower rates of medical errors.

Discussion of Empathy

The empathy section of the literature review discussed empathy's etymology from its Greek origins through to its use within the clinical setting. Within the general practice setting, empathy focuses on identifying empathic opportunities between patient and practitioner. The practitioner listens, checks and interprets the information presented by the patient in order to act on this information in a helpful and therapeutic way.

During this process, the practitioner must try to take into account the patient's personal and social history, as well as the rules and norms associated with the patient's background. If the patient-practitioner relationship is supported, there is evidence to suggest that this will have

a positive outcome in terms of the clinician's access to diagnostic information, and improve the accuracy and the choice of the treatment options and therapies available to the patient.

The literature on empathy also suggests that development of empathic communication in the patient practitioner relationship can support patient enablement (Mercer et al. 2002), improve compliance (Mercer et al. 2005; Mercer and Howie 2006) and have a positive effect on patient reported health outcomes (Howie et al. 1999).

There are also critics of empathy's use within a medical context who argue that encouraging the practitioner to see the health complaint or concern from the patient's point of view will compromise the practitioner's objectivity, challenge professional boundaries and put a strain on the patient-practitioner relationship by highlighting mismatched perspectives (Barry et al. 2000; Marvel et al. 1999). However, the literature also shows that empathy is a basic value of helping behaviour that enhances communication skills. Empathy is important for patient satisfaction and patient enablement and may ultimately help the patient manage their own health better by enhancing Self-Management Support.

The Effect Model of Clinical empathy by Neumann et al (2009) will be used as a framework to explore the aims and objectives of the current thesis. It should be noted that most measures of empathy that have been used in research on the topic are patient-reported measures (such as the CARE measure). Observer-rated measures are more scarce, but the literature review did identify a new observer-rated system, the VERONA system (Del Piccolo et al. 2009), which measures patients' emotional cues and concerns and practitioners' responses, which would appear to be a suitable measure for the current study.

3.3 SELF-MANAGEMENT SUPPORT

Definitions of Self-Management Support and related concepts

The concept of Self-Management Support has developed over the 21st century largely in recognition of practical, social and emotional dilemmas of the daily management of health concerns which were the result of the rise in chronic disease and health disparities' (Townsend et al. 2006). The term Self-Management refers to a number of active

changes the patient can undertake to support their own health management, such as changing health behaviours, developing new coping strategies, and adjusting to the realities of the patient's current health complaint (Alliance of Self-Care Research 2012). It has also been described under a number of other terms such as Self-Care and Self- Help.

Self-Management relates to what the patient undertakes in terms of health management responsibilities in order to live well with one or more chronic condition. These tasks can include gaining confidence to undertake the medical, role and emotional management of their condition (Adams et al 2001). In British Columbia (British Columbia, 2011), Self-management describes the attitudes, skills and behaviours a patient uses to manage the impact of their condition. These include their own knowledge of their condition(s), their ability and willingness to enter into shared decision making with their health care professional, and their understanding of the impact the condition(s) has on their physical, emotional, social and, for some, occupational functioning.

The British Columbia definition also highlights the effect that self-management can have on the patient's willingness to adopt lifestyle changes that acknowledge health risks and promote health with the assistance of early intervention and prevention (Anticipatory Care) strategies. The definition also acknowledges the patient's confidence to identify and access appropriate support services when necessary.

The current thesis defined the terms Self-Management Support as the process put in place to allow patients to maintain their health, prevent illness, seek treatment or support (The Long Term Conditions Alliance Scotland 2008). This definition provided a list of behaviours, and topics of discussion that would need to be established to measure Self-Management Support. A coding scheme was sought that would measure the components of discussion within the consultation that relate to Self-Management Support, and that also code health promotion, and preventative topics. The codes related to Self-Management Support would be measured alongside routine general practice discussions and behaviours; therefore, a coding system that supported this was sought and found in the form of the Davis Observation Code (DOC).

The role of the practitioner as provider of Self-Management Support is explored in ideas of sharing responsibility for disease management between the patient and the practitioner, as discussed in the work of Julian Tudor Hart. Hart's (1995) work considers the efficiency of

health care, as he believed that there was a misunderstanding of the nature of health production and the roles the patient and the practitioner played within it. Efficient health care requires a shift away from the patient's traditional role as a passive consumer of health care to an active co-producers of health in partnership with the health care professional. This, Hart believed, would produce a health 'co-operative' that would maintain the delivery of quality health care provision. Hart's understanding of co-produced health care can be seen through the concept of Self-Management Support and related health promotional activities like Anticipatory Care (Watt et al, 2010; The Scottish Government, 2007; 2008). This explanation echoes the sentiments of Tudor Hart's work on Anticipatory Care. In this case, Self-Management Support, like Anticipatory Care, requires the patient to move from their more traditional role as a passive consumer of health to ultimately a co-producer of health with the support of their practitioner. Therefore, the 'support' side of Self-Management Support requires the GP to play an active role in the patient's health care in order for it to be efficient, alongside the patient who must 'self-manage' or take control of the process.

Anticipatory Care comprises health improvement activities that are delivered to prevent future health problems. Anticipatory Care is a form of Self-Management Support that encourages the patient to adopt and maintain one or more behaviours concerned with future health and well-being, reducing disease risks and complications (Watt et al, 2010).

Self- Care

Self- Help; Self- Care and Self-Management Support have been used interchangeably within the literature despite having different meanings. The Oxford English dictionary does not define the term 'Self-Management Support'; however, the term 'Self-Care' is defined as the "*care for oneself; or self-interested behaviour*" (The Oxford English Dictionary 1989).

Self- Care is defined by the Department of Health as one of the key building blocks for a patient centred health service (Department of Health 2005). The Department of Health (Department of Health 2009) describes Self- Care as "*an integral part of daily life and is all about individuals taking responsibility for their own health and well-being with support from the people involved in their care*". The Department of Health also describes research

undertaken on Self- Care as beneficial in its support of patients with long terms conditions. Moreover, they say Self- Care can empower patients to take more control over their own health (Department of Health 2005). Other definitions of Self- Care include that of Makinen et al (Makinen et al. 2000), who describe Self- Care as “*the ability to evaluate one’s state of health and adjust one’s behaviour*”. While Chapple (Chapple and Rogers 1999) and Rogers (Rogers 1980) suggest four types of Self- Care behaviour: regulatory, preventative, reactive and restorative (Chapple and Rogers 1999), others such as Toljamo et al (Toljamo and Hentinent 2001) define a different four areas of Self- Care which include: flexible, regime adherence, self planning or neglect. The differences between these terms, according to Wilson, is that Self-Management requires patients to undertake tasks that were traditionally the responsibility of professionals, for example, the management of drug dosages (Wilson 2006).

The Scottish Government (The Scottish Government 2009) defines Self-Management Support as “*the successful outcome of the person and all appropriate individuals and services working together to support him or her to deal with the very real implications of living the rest of their life with one or more long term condition*”. Moreover, the Long Term Conditions Alliance Scotland defines Self-Management as “*a process where people living with long term conditions can achieve and maintain optimum wellbeing*” (The Long Term Conditions Alliance Scotland 2008). Corbin and Strauss (Strauss and Corbin 1988) report that Self-Management Support consists of 3 main tasks – medical, role and emotional management. Firstly, the term ‘medical management’, refers to the medical management of the condition, such as taking medication. The term ‘role management’ refers to a set of tasks that maintain, change and create new meaningful behaviours or life roles for the patient. Finally, the term ‘emotional management’ refers to how the patient deals with their emotions which can alter the patient’s view of the future. Dealing with emotions such as anger, fear and frustration can become part of learning to self-manage a health complaint (Lorig and Halstead 2003).

The spectrum of Self- Care therefore leads to involvement on many levels, both in terms of the shared responsibilities of patients, their family and friends, as well as health professionals (Department of Health 2005). Figure 9 shows self-care support and its factors as outlined by the UK Department of Health (Department of Health 2005).

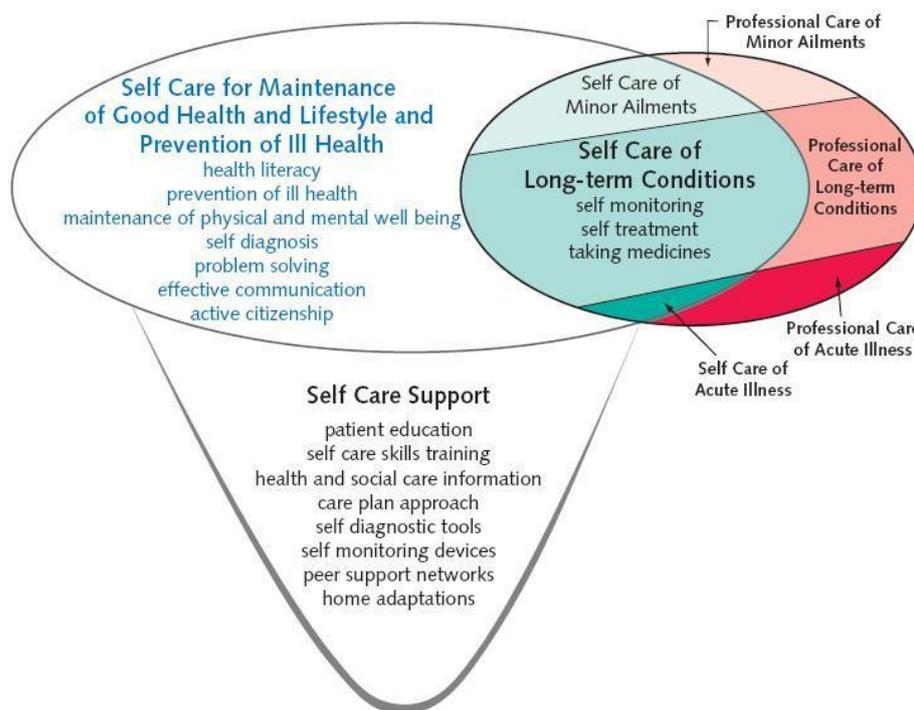


Figure 9: The Department of Health’s Self- Care Support and Self-care diagram

3.3.1.1 Self-Management Support and Anticipatory Care; Study definitions

The current thesis defined the terms Self-Management Support as the process put in place to allow patients to maintain their health, prevent illness, seek treatment or support, manage symptoms of illness and side effects of treatment, accomplish recovery and rehabilitation and manage the impact of chronic illness and disability on their lives and independence (Alliance of Self- Care Research 2012). It has been suggested that within primary care consultations, Self- Management Support by the healthcare practitioner should help patients monitor their condition(s) and deal with flare-ups, improve lifestyle behaviours, adjust medication, and access community Self- Management Support (Department of Health 2005a; Riegel et al 2009).

As for the term Anticipatory Care, it is considered within the current research as a type of Self-Management Support that focuses on health promotion. The common types of health promotion that are likely to be undertaken within general practice consultations in relation

to lifestyle changes regarding weight, exercise, diet (nutrition), smoking, alcohol and other types of substance misuse (Callahan and Bertakis 1991). Anticipatory Care is a concept that includes health improvement activities delivered within or in association with health care to assist patient's adoptions and maintenance of one to more behaviours concerning their future health and well-being. The intervention aims, in the long term, to reduce or prevent the risk of disease or further health complaint complications (NHS Scotland 2008; Watt et al. 2009).

3.3.1.2 Anticipatory Care; origins and developments

Anticipatory Care is a term often associated with Self-Management Support and Self-Care. Within general practice, Anticipatory Care is a concept that focuses on the prevention of future health problems it was pioneered by the Dutch practitioner Van den Dool, who first coined the term, defining it as "*an act of tertiary prevention which takes place during normal day-to-day contact between a family doctor and his patients*" (Van Den Dool 1970). British General Practitioner Tudor Hart (Tudor Hart 1988) followed Van Den Dool's example with an approach that combined both reactive and Anticipatory Care within routine consultations. Tudor Hart achieved this by dealing with the problem the patient presented with that day, as well as trying to address future problems by modification of risk factors and behavioural changes aligned with health promotion. This approach included a wide range of preventative activities aimed at reversing risks in people who were otherwise well, and the prevention of complications in patients with established conditions (Watt et al. 2010).

The work of Tudor Hart has heavily influenced NHS policy on Anticipatory Care, especially within Scotland. The Scottish Government health intervention plan, Keep Well (Scottish Executive Health Department 2005), defines Anticipatory Care as an attempt "*to address health inequalities*". They go on to state "*it is likely that public sector resources will have to focus on early interventions and prevention...to develop a more anticipatory and proactive approach to working with disadvantaged groups*" (Scottish Executive Health Department 2005).

Anticipatory Care aims to help patients adopt and maintain one or more behaviours concerned with their future health and general well-being. This can be achieved through the reduction of risks (Watt et al. 2010). This requires a shift from the traditional role of

the patient as a passive consumer of health care towards a collaboration with the health professional in what Tudor Hart describes as the patient and practitioner “co-producing” health (NHS Scotland 2008). The suggestion of the patient taking greater control over the management of their health with the support of their practitioner is a logical progression of Tudor Hart’s idea that Anticipatory Care works best when the patient and the practitioner have a continuous and therapeutic relationship.

Self-Management Support; the Chronic Care Model

The therapeutic relationship is also key to Self-Management Support and Wagner et al’s (Wagner et al. 2001) Chronic Care Model (CCM). This model incorporates strategies such as collaborative goal setting, skills enhancement and access to resources and continuity of care. Therefore, the Chronic Care Model (Wagner et al. 2001) is understood in terms of each chronically ill patient’s care being organized and co-ordinated by a team of medical professionals with linkage to community resources who aim to improve the patient’s outcomes through a series of interactions.

Within these interactions, the team attempt to elicit and review data concerning the patient’s perspective and other critical information about the course and management of the condition. Thereafter, the model focuses on helping patients to set goals and solve problems. This includes clinical and behavioural interventions that prevent complications and optimize disease control and patient well-being. Finally, this model ensures continuous follow-up.

This system also aims to ensure interactions are part of an ongoing assessment that supports the patient’s self-management of their condition while providing medical care and follow up consultations associated with good outcomes.

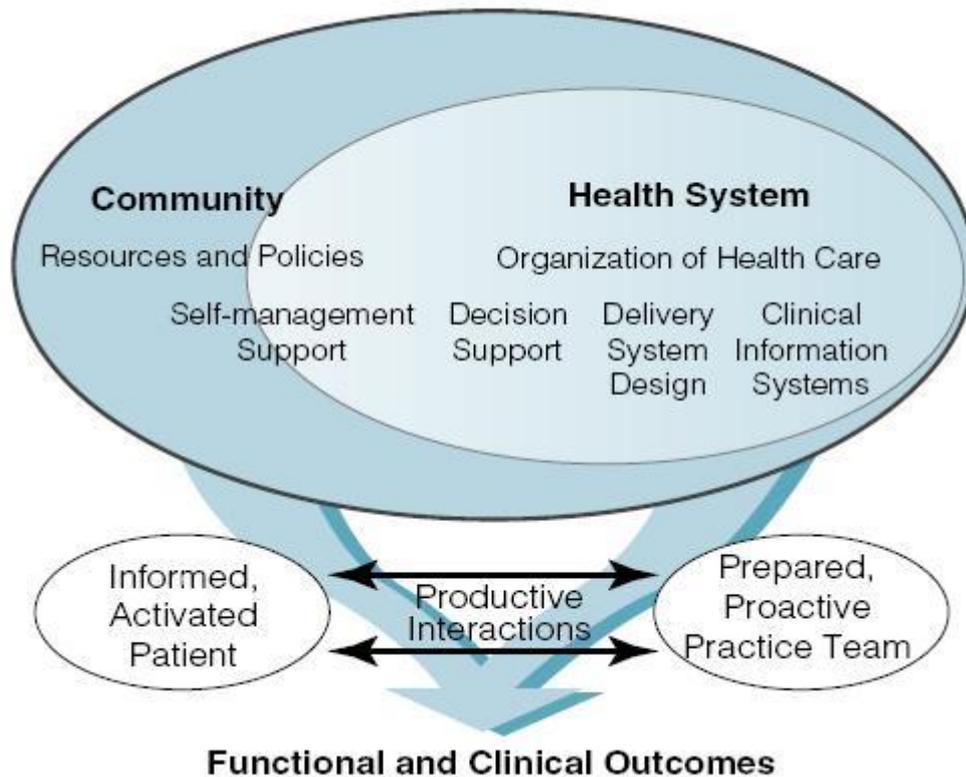


Figure 10: The Chronic Care Model (Grossman et al. 2004)

To implement what is suggested in the Chronic Care Model (Figure 10), the patient and practitioner must work together within the clinical context. This therapeutic relationship is central to discussing and developing an understanding of both the problem and the steps to a solution.

How does Self-Management Support work?

The term Self-Management Support within the clinical setting involves three types of task. The care and management of the condition is the priority. This is followed by secondary factors that arise from the condition, such as the emotions, and adapting to everyday activities and roles due to this condition, and finally dealing with the change in emotions (Institution of Healthcare Improvement 2005).

An example of a Self-Management Support in primary care is the Life Shirt System study (Coyle et al. 2009; Grossman et al. 2004; Department of Health 2007; Mullen et al. 1992). This study involved patients who suffered from respiratory care conditions being self-monitored using an ambulatory multi-sensor monitoring system which collected, analyzed

and reported the health data of the patient. This device has also proved useful for home detection of life threatening sleep disorders such as sleep apnoea (Coyle et al. 2009; Grossman et al. 2004; Department of Health 2007). Another example of a Self- Care Support intervention is demonstrated by Coronary Heart Disease patients, through Self- Care education on medicine, smoking, exercise and diet (Mullen et al. 1992). Finally, patients dealing with mental health issues have benefited from Self-Management Support in a study by Dodd's (Dodds et al. 2000). Participants were given a number of interventions to help them manage their own care, including family interventions. These intervention encouraged patients to build on their knowledge of their condition with the support of family and friends, which saw a reported increase in patient's compliance rates, and satisfaction.

Self-Management Support can also be used in chronic illness management (Institute of Healthcare Improvement 2005), wherein Self-Management Support is used to empower and prepare patients to manage their own health care. One such approach is seen through the work of Glasgow et al (Glasgow et al. 2006) where the emphasis is placed on the patient's central role of managing their own health through supportive strategies that include: assessment, goal-setting, action planning, problem-solving and follow-up. This ideas is further supported by the 5A's effective Self-Management Support strategies that are; assess, advice, agree, assist and arrange (Glasgow et al. 2003).

3.3.1.2.1 Glasgow's 5As model of Self-Management Support strategies

The 5A's (Glasgow et al. 2003) model (Figure 11) provides within short consultations such as those in the general practice setting, a structured method of detection, assessment and management of patient risk factors.

5 A's Behavior Change Model Adapted for Self-Management Support Improvement

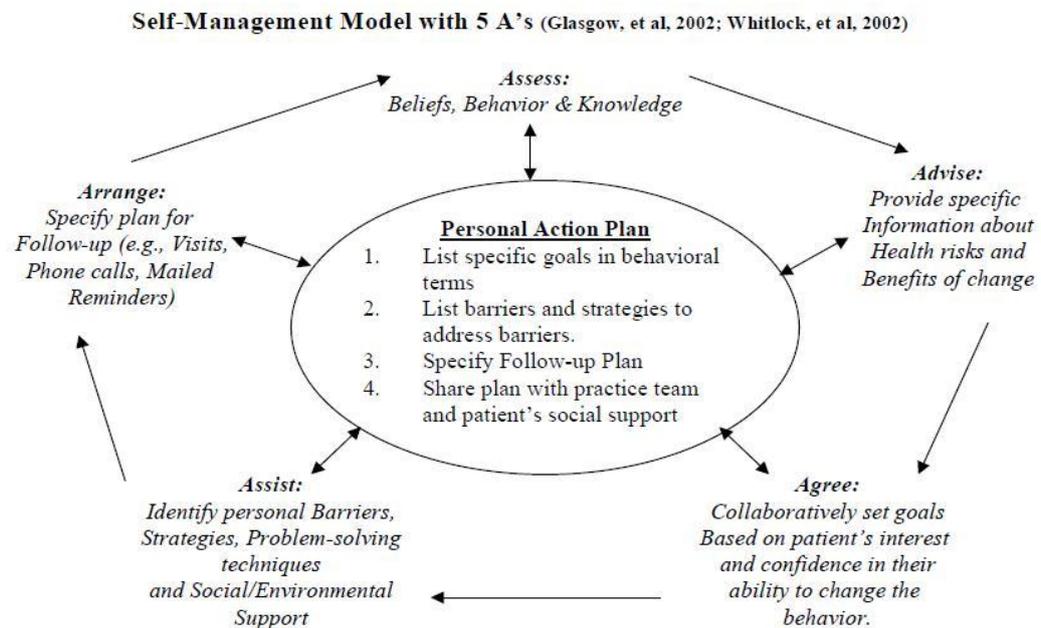


Figure 11: Glasgow's 5A's model of Self-Management Support (Glasgow et al. 2006)

The model uses the terms 'Assess', 'Advise', 'Agree', 'Assist' and 'Arrange'. These components are interchangeable and should be considered in terms of a flexible cycle in which the stages can be revisited when necessary. The model takes into account the patient's beliefs, behaviours and knowledge (assess) to allow the practitioner to provide specific health knowledge that addresses the risks and benefits of behaviour change (advise). This process should be collaborative and tailored to suit the individual patient's needs and ability to carry out this process (agree), and tailored to deal with any personal barriers the patient might need to overcome (assist). This plan should be actively followed up to ensure the process continues to benefit the patient and that the practical support continues to be available (arrange).

Although the 5A's model (Figure 11) provides a useful tool within the consultation, it is not possible for it to cover all the relevant tools available to both patient and practitioner. The instrument acts to facilitate and should only be used if it best suits the needs and purpose of the situational constraints (Glasgow et al. 2006). The 5A's model is designed

to be used on single disease focused consultations, and would not be as effective in consultations dealing with multiple morbidities.

Within the literature, Glasgow's 5A's (Glasgow et al. 2006) model of Self-Management features in a number of papers, the majority of which have been authored or co-authored by the originator of the study. This work has used subcategories of the model with patients who have been diagnosed as diabetic or hypertensive (Glasgow et al. 2005). This work, has praised the model's wider application for other diseases and use with primary care patients in general (McCormack et al. 2008). Glasgow's work tends to promote the idea of goal setting as relevant to numerous health conditions and promotional topics, such as weight loss and smoking cessation (McCormack et al. 2008; King et al. 2010; Glasgow and Strycker 2000). It has raised awareness of the importance and measurable value of health promotion interventions. Glasgow et al's work provides a simple framework for clinicians to evaluate the patient's ability to undertake Self-Management of their health with the support of their physician, however, it has come under criticism by health providers (McCormack et al. 2008; Tooberrt et al. 2000) for being time consuming and impractical within the constraints of one off consultations.

In practical terms, the 5A's model within the literature (Hung and Shelley 2009; Glasgow et al. 2006) has been used within consultations carried out in the USA, largely focused on single conditions. However, the 5A's model is beneficial in that it provides a practical method of measuring Self-Management Support within the consultation setting. Despite this, the literature (Blakeman et al. 2009; Ísterlund Efraimsson et al. 2009; Lorig et al. 1993; Jeranta et al. 2004; Glasgow R.E. 2004) suggests that within routine consultation very little Self-Management Support is undertaken within general practice, and there are no validated observational measures currently available to measure the amount that is taking place. For Anticipatory Care even less is known.

3.3.1.3 Self-Efficacy

The term Self-Efficacy, like Self-Management Support, is not defined by the Oxford English dictionary, however the term ‘Efficacy’ is. It is referred to as the ‘*power or capacity to produce effects; or the power to effect the object intended* (The Oxford English Dictionary 1989)’; in this case on the individual patient.

Self-Efficacy has also been used to describe the belief that an individual is capable of performing in a certain manner to attain certain goals and manage prospective situations. According to Bandura (Bandura 1977), Self-Efficacy is “*the belief in one’s capabilities to organize and execute the courses of action required to manage prospective situations*”. Bandura’s (Bandura 1977) definition of Self-Efficacy derives from social cognitive theory, which provides a link between self perceptions and individual actions (Jeung and Braun 1994). Self-Efficacy theory has two types of expectancies which exert influences on behaviour: efficacy expectation, and outcome expectation (Bandura 1977; Bandura 1986; Jeung and Braun 1994).

The use of Self-Management that takes into account Self-Efficacy and patient’s personal skills has been aided by a number of techniques such as Self-Care devices, decision making aids, and multiple e-health applications as seen through peer run Self-Management courses (Brycroft and Tracey 2006). An example of a Self-Management course in primary care is the Life Shirt System study (Coyle et al. 2009; Grossman et al. 2004; Department of Health 2007; Mullen et al. 1992). This study required patients who suffered from respiratory care conditions to be continually monitored using an ambulatory multi-sensor monitoring system which collected, analyzed and reported the health data of the patient. This device has also proved useful for home detection of life threatening sleep disorders such as sleep apnoea (Coyle et al. 2009; Grossman et al. 2004; Department of Health 2007).

Self-Care interventions in the case of CHD patients, via education on medicine, smoking, exercise, and diet, is a lucid example of self-care intervention at work (Mullen et al. 1992). Finally, patients dealing with mental health issues and in particular schizophrenia sufferers have benefited from a study by Dodd (Dodds et al. 2000) who found participants were given a number of interventions to help them manage their own care, including family interventions. These interventions encouraged patients to build on their knowledge of their

condition with the support of family and friends, which saw a reported increase in patient's compliance rates, and satisfaction.

How can Self-Management Support be measured?

The outcomes of Self-Management Support and Self-Care are measurable in terms of their outcomes, such as increased patient satisfaction with care, feeling better, better health outcomes and improved functioning within the patient's life (Department of Health 2005). These outcomes vary according to patient, need, and condition.

Wagner et al (Wagner et al. 2001) argue that the value of Self-Management Support is seen through outcomes such as better disease control, patient satisfaction and better recording within information systems. Self-Management Support policies and initiatives are currently in place in association with the NHS (Scottish Executive Health Department 2005). Patients believe that GPs are an important potential source of Self- Management Support (Department of Health 2005b), but many barriers to the delivery of Self- Management Support within GP consultations have been identified (Blakeman et al 2010). From the limited number of studies conducted, the amount of Self- Management Support that takes place within primary care consultations appears to be very limited (Johansson and Akerlind 2005; MacDonald et al 2008; Blakeman et al 2010). How this varies by patient characteristics (such as deprivation) is not known. The literature review failed to find any validated measures specifically designed to measure Self- Management Support by observer-rating. However, the Davis Observational Coding system (Callahan and Bertakis 1991) was identified as a comprehensive objective measure of activity within primary care consultations, which includes items of direct relevance to Self- Management Support. Further details are given in Chapter 7.

3.3.1.4 How can Anticipatory Care be measured?

Tudor Hart believed in the importance of evaluating the health problems of his patients alongside anticipating future challenges through the strengthening of the patient-physician relationship (Tudor Hart 1988). This would see general practice care building on the foundations of reactive care. Hart, however, was concerned over the business approach to health, where routine proactive monitoring of health indicators would occur only when incentives were offered to GPs. This can arguably be seen within the introduction of the

voluntary incentive scheme, where groups of indicators within which patient epidemiology can be measured; otherwise known as The Quality of Care Framework (QOF).

Even with these policies and incentive schemes in place, there remains a dearth of tools to measure Self-Management Support and related activities such as Anticipatory Care by validated observer based methods, which poses a challenge to the current research. Previous research has reported the use of patient reported and doctor reported measures (Glasgow et al. 2006; Mercer et al. 2004). However, the Davis Observational Coding system (Callahan and Bertakis 1991) was identified as a comprehensive objective measure of activity within primary care consultations, which includes items of direct relevance to Anticipatory Care (defined as health promotion type activities). Further details are given in Chapter 7.

How can Self-Management Support be enhanced?

The collaboration between primary care and social care services is important to provide the range of services needed to offer Self-Management Support. These services would tailor a Self-Management plan to suit the patient's individual needs taking into account their social and personal circumstances (Cawston et al. 2007). This could see primary care doctors, nurses, as well as counselling services and external agencies all playing a role at the different stages of the disease management and patient's development. Such groups could act to support patient's through the long term stages of their self care program (Department of Health 2007).

There is evidence that some forms of Self-Management Support exist within primary care and social care services. These services work together to provide a range of services that can be tailored to suit the patient's individual needs as well as social and personal circumstances that suit the different stages of the disease management and patient's development. A number of studies have shown that the above noted services come under the umbrella of 'primary care groups' which have produced a number of beneficial effects for individuals with the majority of the interventions creating support networks or groups both in formal and informal ways. These groups have acted to support the individuals within them well into and beyond their Self- Care program (Department of Health 2007).

3.3.1.5 How can Anticipatory Care be enhanced?

Anticipatory Care is a health promotion concept which describes changes to a patient's lifestyle and health behaviour that fosters physical and emotional well-being in an attempt to increase the length and quality of a patient's life. The concept is more than simply removing or managing disease, but in practice should focus on the enjoyment and contentment the patient has with their condition and lifestyle (Bell and Cole 2008; Brotons et al. 2005). Like other health promoting and preventative strategies, it must remain dynamic in order to remain applicable and useful to the improvement of health and disease prevention. In terms of practical application, these terms should act as part of a process that complements each stage's value and use.

Within routine consultations, Anticipatory Care can be viewed as the first stage of the process whereby the physician gains and records information regarding the patient's health through routine consultations such as the recording of blood pressures (Tudor Hart 1988). The next stage of the process is the application of preventative measures through screening tools that take the information further and use it to identify patients who are at high risk of related disease (American Academy of Family Physicians 2010). This final stage of the process involves health promotion wherein the physician explains the idea of disease prevention and risk management to the patient as a technique that would lengthen and protect the patient's quality of life, and works with the patient to agree a care plan where the process can be reviewed, such as a Self-Management care plan.

Summary of Self-Management Support

Self-Management Support, despite being widely discussed within the health literature, remains poorly defined. It is often referred to under umbrella terms, including Self-Care and Self-Help, as well as being associated within health promotion terms like Anticipatory Care. The literature on Self-Management Support and Anticipatory Care has developed over the 21st century in response to the rise in chronic disease and health disparities in a world population that is living longer than ever before. Anticipatory Care in the last 20 years has become the focus of the Scottish and UK Government's health policies (The Scottish Government 2010; The Scottish Government 2008; The Scottish Government 2008; The Scottish Government 2000; The Scottish Government 2009; The Scottish Government 2010; The Scottish Government 2010; The Scottish Government 2007; The

Long Term Conditions Alliance Scotland 2008). These policies aim to address health inequalities by promoting this approach in association with Self-Management services in local primary care settings.

Self-Management of health requires the patient to take an active role in their health management from the proactive, reactive and restorative stages of their conditions where possible. Likewise, Anticipatory Care aims to use a patient centred approach to reverse the treatment risks and complications for patients with established conditions.

Recent Government policy in Scotland has focused on Self-Management Support and Anticipatory Care as key priorities in primary care, as a response to the rise in chronic disease and health inequalities. However, the amount and type of Self-Management Support and Anticipatory Care that occurs in routine consultations in primary care is not well documented in the literature, nor their relationship with empathy and patient enablement. It has been suggested that within primary care consultations, Self-Management Support by the healthcare practitioner should help patients monitor their condition(s) and deal with flare-ups, improve lifestyle behaviours, adjust medication, and access community Self-Management Support support (Department of Health 2005a; Riegel et al 2009). The literature review did not identify any observer-rated measures specifically designed to measure Self-Management Support. The Davis Observational Coding system (Callahan and Bertakis 1991) did emerge though as a comprehensive coding system of videoed consultations with items that clearly relate to Self- Management Support and Anticipatory Care.

Self-Management Support and Anticipatory Care are concepts that see a shift in responsibility of health management from the practitioner to the patient; however, they are arguably only possible and successful when the patient and practitioner work in unison to face and anticipate future challenges through strengths of the patient-physician relationship.

It is important to note that Self-Management Support and Anticipatory Care are on-going processes that require continuous assessment and management to ensure they continue to improve the patient's health outcomes. Self-Management must be reactive to any changes in the patient's condition both in terms of emotional wellbeing and quality of life. As the management of the health condition shifts to patient-led the patient will be required to

employ coping and decision making strategies as the condition develops; likewise, Anticipatory Care will not be suitable for all patients, and its use should be at the discretion of the practitioner. The practitioner, however, must ensure that they assess the patient's ability to manage their own health successfully in terms of the type of health concern, the risk factors involved and the support that will be given to the care plan agreed upon. This process must take into account the patient's personal barriers, strategies and the social/environment support.

Critics of Anticipatory Care have pointed out dangers and limitations of this approach. These include the fact that Anticipatory Care will require practitioner discretion to choose when the treatment will be suitable for the patient. Other limitations include discrepancies in practice, dangers of misinterpretations and inequalities in offered services. As with the Self-Management Support strategies, there is a concern that this will increase the pressure on already stretched consultation slots, and require complex and expensive data collection in order to measure Anticipatory Care's impact on health outcomes. GPs involved in the Deep End project (Watt 2011) have argued that Self-Management Support is something to aim at within the patient practitioner relationship. They argue that some patients may not be able to self-manage or be against the idea of taking on this responsibility. Some of the GPs saw the process of discussing Self-Management options as a form of coaxing and persuading the patient, which is contrary to the idea that the patient should make the decision to self-manage when they felt able to do so, thereby reinforcing the idea that Self-Management Support is only suitable for certain patients. Selecting the appropriate patients, therefore, may be a may be a lengthy and difficult process.

The Scottish Government's Anticipatory Care initiative 'Keep Well' has been the first of its kind in Scotland to target patients at risk of cardiovascular disease. This initiative however, has not factored into its design a method of measuring patient experiences so little is known of the impact it has had on its target population.

Conclusion

The current literature review aimed to identify and discuss literature relevant to the aims and objectives of the thesis and thus to focus on empathy, Self-Management Support and Anticipatory Care in relation to consultations in general practice. Although a sizeable literature was identified (especially in empathy and Self-Management) there was very

limited research in terms of the role of empathy in Self-Management Support and/or Anticipatory Care.

In terms of a model to help explain the possible mechanism of action of empathy on outcomes, the Neumann et al (2009) was considered to be suitable for the purpose of the thesis. A simplified version of this is shown in Figure 12 to make more explicit the proposed pathway between clinical empathy, Self-Management Support and health outcomes.

In terms of specific observer-rated measures of empathy, Self- Management Support and Anticipatory Care which would be suitable to answer the aims and objectives of this thesis, a lack of specific observer-rated measures of Self- Management Support and Anticipatory Care was apparent. However, a comprehensive coding system of activities and behaviours within routine GP consultations was identified (Callahan and Bertakis 1991), which included items relating directly to Self- Management Support and Anticipatory Care. Further details of this Davis coding system are given in Chapter 5. In terms of objectively measuring empathy (to help validate the meaning of the CARE Measure to patients), the VERONA system ((Del Piccolo et al. 2009) was deemed the most suitable (see Chapter 5 and Chapter 10).

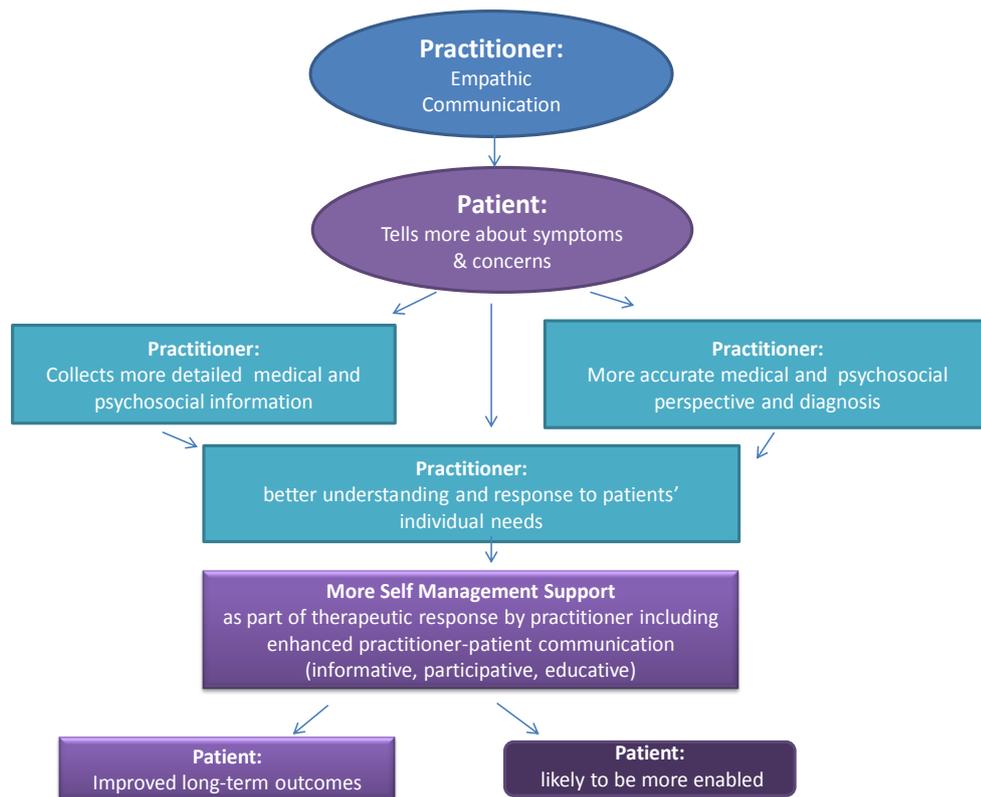


Figure 12: Effect model of empathic communication and Self-Management Support (adapted from Neumann et al 2009).

In the current thesis, the practitioners' empathy is measured by the patient-rated CARE Measure. However, in order to help objectively 'validate' these scores, the VERONA will be used to provide objective evidence of certain behaviours that one would expect of empathic practitioners, namely an ability to respond empathically to patients' emotional concerns and emotional cues. This would then help patients tell more about symptoms and concerns. In terms of the factors leading to more Self-Management Support and the actual amount and type of Self-Management Support (including Anticipatory Care), these will be measurable with the Davis Coding system. In the dataset being used in this thesis, patient enablement has been measured with the Patient Enablement Instrument (PEI). Longer-term outcomes have been measured at 1 month by the MYMOP instrument (a patient-rated outcome measure). Further details of the original study are given in the next Chapter, Chapter 4.

Chapter 4: Context

4.1 Summary

This chapter reviews the data collected as part of a previous study undertaken by Mercer, Watt and Little (Mercer et al. 2012) involving general practice consultations with 659 patients and 47 GPs from 20 general practices in low and high deprivation groups. These data was used for the secondary analysis on which the current thesis was based.

For the purposes of this chapter Mercer, Watt and Little's (Mercer et al. 2012) work will be referred to as the 'previous study'. This study was undertaken between 2006 and 2009. The work undertaken in the current thesis on the Davis Observation Code (DOC) and the Verona-CoDES-CC coding system will be referred to as the Davis and Verona studies (Figure 13).

The chapter describes the target populations, sampling frame and study populations of the previous study. Thereafter, the study populations of the Davis chapters, based on 499 consultations (comprising of the responding participating to the one month follow up of the previous study) and the Verona study, based on 112 consultations are outlined. The consultation selection process is also outlined in the chapter. For each section the characteristics of the practices, GPs and patients are described.

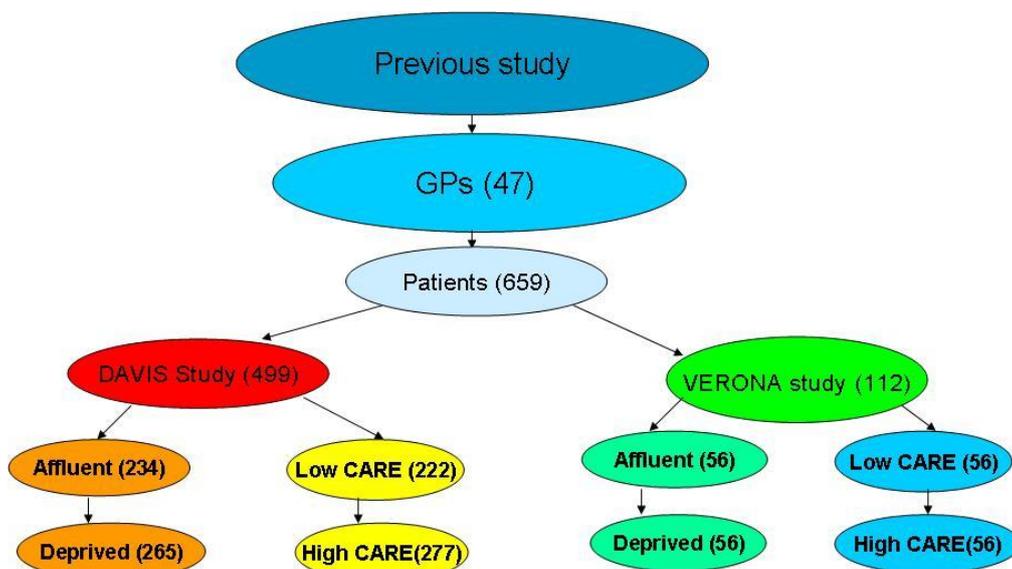


Figure 13: Flow Diagram showing the relationship of the Verona and Davis studies data to the previous study data.

4.2 Deprivation

Deprivation has been discussed at length in health care research. In Scotland, deprivation is commonly measured using the Scottish Government's Scottish Index of Multiple Deprivation (SIMD) which is based on postcodes. The SIMD divides Scotland into small geographical areas called 'data zones' and assigns each data zone with a deprivation score. There are 6505 data zones within Scotland, each with a population of around 750. SIMD scores are based on 37 indicators of deprivation across 7 domains. These are: current income, employment, health, education, housing, geographic access to services, and crime (NHS Scotland 2012) (Available at: <http://www.scotland.gov.uk/Topics/Statistics/SIMD>).

The impact of deprivation from a general practice perspective has been discussed by Mackay et al (Mackay et al. 2005). Their paper shows the characteristics of practices grouped in tenths of the distribution of mean practices on the basis of the mean SMID score of all patient postcodes. The health variables are displayed in a table showing the 2.5-3.0 fold gradients in prevalence of need going from the lowest to the highest deprived tenths. These findings show a mismatch between need and resource; a mismatch described by the Inverse Care Law. The Inverse Care Law states that the availability of good medical care tends to vary inversely with the need for it in the populations served (Watt 2002). Julian Tudor Hart described the Inverse Care Law in 1971 and since then despite the advances in health care and health care research the Inverse Care Law remains as applicable today as it did 40 years ago.

More recent health research on deprivation continues to show that good medical care tends to vary inversely with the need for it in the population served (Mercer and Watt 2007). The study compared 3,044 National Health Service patients attending 26 GPs within the 16 most deprived and 10 of the least deprived practices in the west of Scotland. The study collected demographic, socio-economic and health variables as well as a range of factors relating to quality of care. The results showed that patients in the high deprivation group tend to consult their GP with a greater number of psychological problems, present more long terms illness (including multiple morbidity), and discuss more chronic health complaints (Mercer and Watt 2007). Access to care took longer, and satisfaction with access was significantly lower in the high deprivation group. The number of problems the patients attended to discuss were higher (especially incidents of psychosocial problems), yet the consultation length was shorter in the high deprivation areas. The GPs reported

higher stress and lower patient enablement in consultations dealing with psychosocial problems in the high deprivation group. Varying levels of patient enablement between GPs were related to GP empathy and severity of deprivation. The increased burden of ill health and increasing demands on primary care resources is evidence that the Inverse Care Law continues to confound attempts to reduce health inequalities (Mercer and Watt 2007).

In a series of discussion papers that drew on the experiences of practitioners and practice staff working within practices serving the 15% of the most deprived data zones in Scotland (as characterized by their SIMD scores), the GPs at the Deep End (Watt G.C.M. 2011) series discussed the challenges of health care delivery in high deprivation areas. They concluded that good health care requires increasing the volume, quality and consistency of care in deprived areas (Watt G.C.M. 2011). High deprivation areas are often characterized by patients suffering from multiple morbidities alongside reduced expectations of involvement in the decision making process on their health, time constraints and lower patient enablement (Watt 2011).

This increased level of burden on routine consultations means that GPs must find a balance between reactive care that addresses the problem the patient consults with at the current appointment as well as be proactive in addressing potential future health problems through Anticipatory Care (Watt 2011). Anticipatory Care as part of a Self-Management Support strategy can help address the patient's medical as well as personal and social problems. This strategy would allow the GP to work with the patient to play a more active role in their own health management while acknowledging the GP's advocacy role (Watt 2011; The Scottish Government 2009). This role would move beyond the GP simply providing information and resources that the patient can refer to but rather use the GP and the practice team's experiences and empathetic relationship to support the patient to access the right resources at the right time (Cawston 2011).

The GPs in high deprivation areas often deal with issues on a slow gradual basis and this can be a very time consuming process (Watt 2011). This process can rely on referrals to multiple resources out with the practices and at times outwith the NHS (Watt 2011) to gain more information about the patient's health complaint. This is sometimes referred to as social prescribing and is discussed in chapter 12. However, a consistent finding on referrals throughout general practice is that if the referral is not timely, local and to a familiar person or setting the patients are less likely to attend. This effect is most acutely reported in the high deprivation consultations (Watt 2011). A better strategy to address the

challenges faced by high deprivation practices would be to use the patient practitioner relationship within the consultation setting to address the burden of the patient's needs. This strategy would take into account the patient's medical as well as social and emotional concerns and discuss them within serial consultations to provide a Self-Management Support strategy based on shared knowledge, flexibility and trust.

4.3 Data

Sample frame of Practices – Greater Glasgow and Clyde

Participating practices were recruited on the basis of their mean Scottish Index of Multiple Deprivation score (SIMD) in 2006. This score is based on the mean SIMD score of registered patients in each practice (from patient postcodes). In total there were 276 practices in the Greater Glasgow and Clyde (GGC) Health Board area, for which 273 practice mean SIMD scores were available (3 missing values). The 273 practices had a mean SIMD score of 31.8. The practices were divided into quartiles of deprivation (SIMD score).

All 273 practices in the upper (high deprivation; quartile four) and lower quartile (low deprivation; quartile one) of deprivation based on SIMD scores were included in the sampling frame, and invited to participate in the study. The mean SIMD score in the upper quartile (68 practices) was 49 (range 41-62) and in the lower quartile (68 practices) was 14 (range 5-22). The average list size of the practices in the sampling frame was 3,901 patients in Quartile 4 (highest deprivation) and 5,531 patients in Quartile 1 (lowest deprivation).

Participating Practices

The sample included 20 practices in total within 13 of these practices representing the high deprivation quartile (quartile 4) out of a possible 68 (19.1%) and 7 presenting the low deprivation quartile (quartile 1) out of a possible 68 (10.3%) (Table 1). Mean deprivation score (SIMD 2006) of participating practices was 46 (range 41-58) and 13 (range 5-22) in the high and low deprivation areas, respectively, which was significantly different ($p < 0.0001$) and very similar to the sampling frame. Mean practice size (number of registered patients) of the participating practices was 5,108 and 7,678 in the high and low

deprivation areas respectively, which was also significantly different ($p < 0.01$) and somewhat higher than the sampling frame. This therefore shows that the participating practices were slightly larger on average for those in the upper compared with the lower quartiles. The reason for the difference in size is unknown, however a conscious effort was made to reflect the practice mix that is representative of Scottish general practice and these differences reflect this population.

Table 1: High and Low Deprivation General Practice sample

High Deprivation	Low Deprivation
13 practices	7 practices
5 Private GP premises	2 Private GP premises
8 health centre	5 Health centres

In terms of the effects it would be expected that the smaller practices would score a higher continuity of care and high enablement based on Howie's (1999) paper that showed larger practices tending to have lower enablement effects. As for the effects of empathy there is no data to show whether practice size has an effect on CARE scores therefore conclusions cannot be drawn on the relationship between patient's perceptions of their GPs empathy and practice size.

Participating GPs

From the 20 participating practices 47 GPs took part, including 25 in the high deprivation practices (60.9% of the GPs in those practices) and 22 in the low deprivation practices (56.4% of the GPs in those practices). Participation in the study was voluntary and the GPs and practices received no payment except for support costs to cover attendance at meetings with the research team.

From the total 47 GPs who took part, 26 were male and 21 female. The average age was 45.8 years (range 32-63 years). The average ages of female and male GPs were 42.4 and 48.5 years respectively.

In the high deprivation group, the average GP age was 46.6 years (range 34-63 years), including 9 female GPs and 16 male GPs. Within low deprivation group the average GP age was 42.8 years (range 32-60 years) including 12 female GPs and 10 male GPs. These

differences in age and gender between high and low deprivation groups were not significantly different (results not shown).

Participating Patients

Participating patients were aged 18 years and over and asked for informed consent prior to the consultation. Patients were required to complete part of the questionnaire before seeing the GP. The consultation was then videoed and the remainder of the questionnaire was completed post consultation.

Overall 659 patients participated (356 patients and 303 patients from low and high deprivation practices respectively) in the study. The mean deprivation scores (SIMD 2006) of participating patients were 49 (SD 20) and 14 (SD 15) in the high and low deprivation groups respectively ($p < 0.0001$). These scores were very similar to the deprivation scores of the participating practice and the sample frame, this suggesting that the participating patients were representative in terms of deprivation. The pre and post consultation patient questionnaires can be seen in Appendix D.

The pre consultation questionnaire recorded the following information. The subsequent publications from these studies are also outlined:

- the number of problems the patient wished to discuss at the consultation (Mercer and Watt 2007; Mercer et al. 2007)
- the type of problem the patient wished to discuss i.e. physical, emotional etc (Howie et al. 1999; Mercer et al. 2007)
- the patient's desire to be involved in decision making before the consultation (Deber and Kraetschmer 1996)
- the patient's age, gender, marital status, and the language the participant speaks at home (Mercer and Watt 2007)
- information on the patient's health in the last 12 months on a 5 point Likert scale (Mercer and Watt 2007)
- whether the patient had a long term health problem or disability that limits their daily activities or work (Mercer and Watt 2007)

- whether the patient had ever been diagnosed with one or more long term condition(s) (from a list of potential 17 conditions) (Mercer and Watt 2007)
- how many times the patient had visited the GP in the last 12 months (Mercer and Watt 2007).

The post-consultation questionnaire had the following questions:

- how enabled patients felt by the consultation (Howie et al. 1999)
- length of consultation (Mercer and Watt 2007)
- whether they would recommend their GP to family and friends (Mercer and Watt 2007)
- overall satisfaction (Mercer and Watt 2007) with the consultation
- involvement in decision making (Mercer and Watt 2007)
- satisfaction with involvement in decision making (Mercer and Watt 2007)
- the CARE measure (Mercer et al. 2004); (Mercer et al. 2004)
- severity of main symptom the patient reported to GP (MYMOP) (Paterson 1996),
- baseline symptom severity (MYMOP) (Mercer and Watt 2007)
- symptom type and severity in last week using the Measure Yourself Medical Outcome Profile (MYMOP) (Paterson 1996)
- well-being in last week using the Measure Yourself Medical Outcome Profile (MYMOP) (Paterson 1996)
- if seeing usual GP (Howie et al. 1999)
- how well the patient knew their GP (Howie et al. 1999)
- Patient Enablement Instrument (PEI) (Howie et al. 1999).

The participating patient characteristics for the high and low deprivation groups can be seen in Table 2.

Table 2: Participant numbers, age and gender across the high and low deprivation groups (percentages).

Patients	No. of participants	Av Age	Gender	Av Age by Gender
Low Deprivation	303	51.5	M 104 (33.6) F 199 (63.7)	M 54.46 F 48.33
High Deprivation	356	50.5	M 133 (37.4) F 223 (62.6)	M 51.68 F 51.32
All	659	51.0	M 237 (35.5) F 422 (64.5)	M 52.87 F 49.91

Table 2 shows that out of the 659 patients who took part 237 patients were male and 422 were female. The average age of the patients overall was 51.0 years; with the average male patient's age being 52.9 and the average female patient age being 49.9 years respectively.

4.1 Follow Up

The follow up process involved asking patients to complete a questionnaire one month after their videoed consultation. This questionnaire was sent to the patients by post with an accompanying telephone call to tell the patient to expect the questionnaire's arrival. Patients who did not reply within one week were sent another questionnaire and telephoned again.

4.2 A comparison of responders and non-responders

The previous data set contained 659 videoed patient consultations. At follow up there were 461 responding patient and 198 non-responding patient consultations. These patient groups are compared to explore the patient characteristics of the two groups as well as the patient's pre and post consultations characteristics as discussed below (further detail included in Appendix F).

Table 3: Comparison of responding and non-responding patients to follow up questionnaire

Patient Variable	Statistic	All Subjects	Responders	Non-Responders	p-value
Age	N (missing)	659 (0)	462 (0)	198 (0)	-
	Mean (SD)	51 (18)	53.2 (17.5)	45.8 (18.2)	<0.0001
	Min – Max	[17, 99]	[17, 90]	[17, 99]	-
Gender	N (missing)	656 (3)	462 (2)	194 (1)	0.6554
Female	N (%)	422 (64.3%)	300 (64.9%)	122 (62.9%)	
Low Deprivation	N (missing)	303	237 (0)	66 (0)	-
	Percentage	46.0	78.2	21.8	
High Deprivation	N (missing)	356	225 (0)	131 (0)	-
	Percentage	54.0	63.2	36.8	
SMID scores	N (missing)	574 (85)	414 (48)	160 (37)	<0.02
	Mean (SD)	32.7(24.5)	30.0(23.8)	42.16(23.9)	

Responders and non-responders to the follow up questionnaire were compared. These data look at the number of participants, their age and gender, and SMID scores. A total of 462 (70.4%) participants took part in the follow up questionnaire; this number represents 78.2% and 63.2% in the low and high deprivation groups respectively. The respondents were significantly older than the non respondents by on average 7.4 years as well as significantly less deprived (Table 3).

Patient Characteristics

The comparison of the 461 responding and the 198 non-responding patient consultations shows that there are a number of differences within the characteristics of the groups. These results show that there were no significant difference between age and gender for the responding and non-responding groups, however on average the responding group was 3.6 years younger than the non-responding group and female patients made up the majority of all the groups.

The responding and non-responding groups were also similar in terms of their rating of their own health within the and the number of times they reported visiting their GP last 12 months, their mental health (PHQ-9) and anxiety scores and whether or not they reported

multiple morbidity. However, it was found that there was more time visits to the GP and instances of anxiety, multiple morbidity and mental health problems reported within the high deprivation compared with the low deprivation groups in both the responding and non-responding groups.

The responding and non-responding group also showed no significant difference within they reported reasons for the patient visiting their GP, with the exception of physical problems that showed higher counts within the responders compared with the non-responders' category within the low deprivation group. There were no significant differences found within the high deprivation group. There were also no significant differences found between the number of problems the patient attended to GP to discuss, how well the patient reported knowing the GP and the patient's reported expectations of involvement between the responding and non-responding groups in both the high and low deprivation groups.

As for the post consultation characteristics there were no significant differences found for mean CARE measure score, consultation length (minutes), rating of participation in the consultation, satisfaction with participation (decision making) within the consultation, patient enablement (Howie) and patient satisfaction. However, it was found that on average (mean scores) the high deprivation group rated their participation within the consultations higher than the low deprivation group, and the low deprivation patients reported that they were more satisfied with their participation (decision making) than the high deprivation group in both the responding and non-responding groups. The responding patients also reported feeling more enabled by their GP in both the high and low deprivation groups compared with the non-responding group.

There was a significant difference found within the high deprivation group for the amount of talk time given to the patient before they were interrupted by the GP at the start of the consultation. It was found that more time was given to the non-responding compared with the responding group within the high deprivation group. There was no significant difference found for the amount of talk time at the start of the consultation for the low deprivation group.

4.3 Summary of previous study

In summary the previous study (Mercer et al. 2012) looked at verbal and non-verbal communication in the consultation, patients' ratings of quality, and subsequent outcomes in general practice in areas of high and low deprivation. The study recruited 659 patients. Two thirds of the participations were female, with an average age of 51 years reported.

Patients consulting GPs in high deprivation group had more multimorbidity and problems to discuss but lower expectations of involvement in decision-making compared with those from the less deprived group, and reported less actual involvement. Although they knew the GPs better, they saw them as less empathic. Video analyses confirmed that GPs in the high deprivation group were less patient-centred in terms of finding common ground, and were less supportive non-verbally at the start of the encounter than those in low deprivation group. Symptom and wellbeing scores were significantly worse in the high deprivation group at baseline (Table 4).

The study found that the CARE measure scores were unrelated to verbal communication, and the majority of the non-verbal variables. It was also found that patient enablement was unrelated to verbal and non-verbal communication. However, the CARE did predict enablement and better health outcomes (MYMOP change scores) in both the high and low deprivation groups. The GP looking at the computer rather than the patient generally had a significant negative effect on outcome, whereas smiling had a positive effect in the high deprivation group.

The findings of the previous study have been reported to the funder but have not as yet been published.

Table 4: Demographics of participating patients from the previous study

<i>Variable</i>	<i>Level</i>	<i>Statistic</i>	<i>All Areas</i>	<i>Low Deprivation</i>	<i>High Deprivation</i>	<i>p-value</i>
Sex		N (missing)	656 (3)	300 (3)	356 (0)	-
	Female	N (%)	422 (64.3%)	199 (66.3%)	223 (62.6%)	0.3279
Marital Status		N (missing)	649 (10)	297 (6)	352 (4)	-
	Single	N (%)	172 (26.5%)	68 (22.9%)	104 (29.5%)	< 0.0001
	Married/living with partner	N (%)	314 (48.4%)	174 (58.6%)	140 (39.8%)	
	separated	N (%)	29 (4.5%)	8 (2.7%)	21 (6%)	
	Divorced	N (%)	55 (8.5%)	16 (5.4%)	39 (11.1%)	
	Widowed	N (%)	79 (12.2%)	31 (10.4%)	48 (13.6%)	
Rating of Health over Past Year		N (missing)	648 (11)	297 (6)	351 (5)	-
	very good	N (%)	104 (16%)	60 (20.2%)	44 (12.5%)	< 0.0001
	Good	N (%)	223 (34.4%)	125 (42.1%)	98 (27.9%)	
	Fair	N (%)	199 (30.7%)	79 (26.6%)	120 (34.2%)	
	Bad	N (%)	95 (14.7%)	27 (9.1%)	68 (19.4%)	
	very bad	N (%)	27 (4.2%)	6 (2%)	21 (6%)	
Age		N (missing)	656 (3)	300 (3)	356 (0)	-
		Mean (SD)	51 (18)	50.5 (19.1)	51.5 (17.1)	0.5065
		Min - Max	[17, 99]	[17, 99]	[17, 90]	
Multiple Morbidity Count		N (missing)	659 (0)	303 (0)	356 (0)	-
		Mean (SD)	1.9 (1.7)	1.6 (1.4)	2.2 (1.9)	< 0.0001
		Min - Max	[0, 11]	[0, 8]	[0, 11]	
GP Visits in Past Year		N (missing)	613 (46)	284 (19)	329 (27)	-
		Mean (SD)	6.1 (5.7)	5.4 (4.9)	6.8 (6.3)	0.0015
		Min - Max	[0, 55]	[0, 30]	[0, 55]	
Anxiety Score		N (missing)	626 (33)	288 (15)	338 (18)	-
		Mean (SD)	11.2 (3.2)	10.8 (3)	11.6 (3.3)	0.0026
		Min - Max	[0, 18]	[0, 18]	[0, 18]	
Depression Score (PHQ-9)		N (missing)	594 (65)	283 (20)	311 (45)	-
		Mean (SD)	6.4 (6.1)	5.5 (5.4)	7.3 (6.6)	0.0008
		Min - Max	[0, 27]	[0, 27]	[0, 27]	

Video Consultations

A total of 659 patients participated in the videoed consultations.

In the previous study, verbal communication was assessed by the Measure of Patient-Centred Communication (MPCC)(Brown et al. 2001). This contains three main components;

- Exploring illness experience,
- Understanding the whole person
- Finding common ground.

The three components can be added to provide a total score.

Non-verbal communication was assessed using a modified version of Mehrabian's schemata (DiMatteo et al. 1980; Mehrabian 1972) which included;

- Number and duration of smiles,
- Number of positive facial expressions,
- Number of head nods,
- Number of supportive gesticulations,
- Duration of gaze towards patient,
- Duration of self/object manipulation,
- Use of computer and notes,
- Head orientation and body orientation,
- Arm relaxation and neck relaxation
- And enthusiasm (based on tone of voice).

GP empathetic engagement and confidence were rated using a global rating scale (Truax and Carcuff 1967) and the CARE measure (Mercer et al. 2004)(Appendix E).

Context of previous study to current study

The findings of the previous study have highlighted the role the GP plays in the patient practitioner relationship, especially when consulting in areas of high deprivation. Empathy

was found to improve health outcomes and GP satisfaction and was related to patient enablement.

The current study builds on the findings of the previous study and examines the relationship between empathy and patient enablement. This will determine what tasks and types of communication within the consultation setting build on the foundations of the patient practitioner relationship to facilitate Self-Management Support (including Anticipatory Care) in general practice consultations in groups of high or low socio-economic deprivation in Scotland.

4.4 Conclusions

The participating practices in the previous study were representative of all the practices in the sampling frame (upper and lower quartiles of SIMD scores) in terms of levels of deprivation. The study achieved a 70% response rate for the one month follow up questionnaire. There was almost double the number of high deprivation practices as low deprivation practices (13 vs. 7) though the number of participating GPs was similar (25 vs. 22). This difference in recruited practices reflects the difficulties the original study had in recruiting low deprivation practices, and the fact that practices in low deprivation areas tend to be larger, with more GPs per practice, than in high deprivation areas.

A comparison of the responding and non-responding patient groups showed that there were some reported differences between the patient groups in terms of age or gender, with the responding patients being more likely to be female and on average 7.4 years older than the non-responding patients. The responding and non-responding patients also reported no significant differences between their groups in terms of their reported health status in the past 12 months the number of times they reported visiting their GP, their multiple morbidity or mental health status. However, the high deprivation group in both the responding and non-responding groups were more likely to report poorer health, more instances of multiple morbidity and poorer mental health. The high deprivation group for both responding groups also reported knowing their GP better on average, yet had lower expectations of involvement within the consultation than the low deprivation responding and non-responding group.

Overall, there was also no significant difference between the responding and non-responding group in terms of patient satisfaction, consultation length, mean CARE score

and patient enablement. The findings suggest that empathy plays a central role in the general practice consultation both in terms of patient enablement and subsequent health outcomes, in agreement with previous conclusions (Mercer and Watt 2007; Neumann et al. 2009).

Chapter 5: Methods

5.1 Summary

This chapter provides details on the methods used within the thesis, including an outline of the rationale of the coding scheme selection process and the inter-rater reliability techniques that were employed as well as the transcription work undertaken on the videoed primary care consultations.

The inter-rater reliability process, timeline and cycles of learning as well as the results for both the Davis Observation Code (DOC)(Callahan and Bertakis 1991)(Chapter 6 &7) and Verona Coding definitions of Emotional Sequences for Cues and Concerns (Verona-CoDES-CC) (Del Piccolo et al. 2009)(Chapter 9 &10) can be found in more detail within their separate chapters.

5.2 Videoed Primary Care consultations

The videoed primary care consultations were recorded between May 2006 and August 2008 as part of a previous study which aimed to determine the relationships between patients' rating of the GPs empathy (CARE Measure), objectively assessed verbal and non-verbal aspects of communication, and prospective self-reported health outcomes in areas of high and low socio-economic deprivation. The work carried out within the previous study can be seen in the context chapter (chapter 4).

In order to gain an initial understanding of the content of videoed primary care consultation database, a random selection of 6 videos were reviewed by the author with Professor Stewart Mercer and Professor Graham Watt. This provided the opportunity to discuss potential coding schemes that would fit the data set.

5.3 Coding scheme selection process

Post discussion, a list of coding system options were compiled and reviewed in a qualitative manner which were then discussed further to determine which coding systems best suited the data and thesis objectives.

This list included the Roter Interaction Analysis System (RIAS), The Davis Observation Code (DOC) and the Verona-CoDES-CC for analysis of emotional cues, concerns and health provider responses. Further to this the Glasgow's 5As model of behaviour change was considered not as a potential coding method but as a reference model.

A large number of coding tools were considered as part of the selection process. The coding systems were sought to address the study objectives of measuring empathic communication, Self-Management Support and Anticipatory Care in routine general practice consultations. The coding systems sought also had to be applicable to videoed consultation data. In order to try to identify appropriate coding systems, the literature search was widened to not only include the study objectives but to also consider terms such as health promotion and coding within a consultation setting in general. The widened search terms were in a response to a lack of coding systems that specifically measured the objectives of the thesis. It is important to note that many of the objective measuring tools found during the search process did not explicitly measure Self-Management Support. Those coding tools have been listed in Table 5. The table outlines the coding system, where the system had been published, and any literature in which it had been subsequently used as well as the reason for it being rejected for use within the current study.

It should be noted that the Measure of Patient-Centred Communication (MPCC) (Brown et al. 2001), which was developed for primary care and has been widely used, was used to code all the consultations in the original study that this thesis is based on (Mercer, Little, Watt). The coding system is discussed in detail in Chapter 4; Context, and is therefore not included within the Table 5. This measure contains three main components; exploring illness experience, understanding the whole persona and finding common ground. The three components are combined to provide an overall score. . The measure does not specifically measure empathy, Self-Management Support (nor Anticipatory Care) and therefore was not of use in the current thesis.

Self-Management Support coding tools

Mjaaland et al (2009) used a modified version of the RIAS coding system (Roter, 2000) that added four categories; attribution, resources, coping, and solution focused techniques. Similarly to the Coleman et al (2000) method, this coding tool can be applied to routine consultations and can consider the whole consultation. However, like the RIAS system

alone this method is time consuming and would require intensive training for the author to apply to the current data. The modifications by Mjaaland et al (2009) did not directly measure Self-Management Support

Health Promotion coding tools

Makoul et al (1995) designed a novel method of coding health promotion in primary care, Their tool examined patient and physician communication related to prescribed medication. However, the authors did not publish their coding scheme in their original or any subsequent papers nor did they define their working definition of health promotional activities. The focus was also limited to medication. Therefore, it was decided that this tool would not be selected by the author for use within the thesis.

Another coding system that was considered by the author was the Patient Centred Behaviour Coding Instrument (PBCI) used by Zandelt et al (2005). The PBCI was used in conjunction with a specialist computerized software that acted as a real time coder, that automatically applied the codes to the consultation. Zandelt's (2005) paper presents the coding system and script.. The coding system has been criticised in terms of reliability (Zandelt et al 2005;2006).

Another coding tool considered was a system devised by Coleman et al (2000). This system codes 4 main behaviours within consultations with the aim to measure the 'readiness' and 'resistance' of the patient to smoking cessation. The behaviours included; mimizing, avoiding, arguing/interrupting, and ignoring behaviour. This system was designed to be applied in routine consultations. However, it was deemed too specific to health promotional activity regarding smoking cessation and therefore was not useful to the varied dataset used in the thesis.

The Eurocommunication Scale, by Mead and Bower (2000a) was devised as a global rating measure of the degree of patient-centredness in consultations. The tool does not measure the specific objectives of empathy, Self-Management Support or Anticipatory Care. Other coding systems that were also considered include the ALFA toolkit (De Luisgnan et al, 2008). This coding method devised by the authors of the paper uses computerized software to analyse mediated consultation observations. The software also collects data on movement as well as communication and seeks patterns in both to code. The coding system could be applied to a range of consultation behaviours but is very expensive to

purchase and requires training to operate. Therefore it was not selected for use on the thesis data.

Other primary care coding tools

Dent et al (2005) devised the Cancode Interaction Analysis system, a computerised coding tool that allows for the manual coding of video or audio consultation data. The Cancode method specifically looks at interaction in the consultation under four categories; source, content, function and emotion. The software was not deemed appropriate for the current study as it is time consuming to learn and apply to the data and is not specific to empathy or Self-Management Support.

Another coding tool considered was the CN-LOGIT (Butow et al,1995). This system uses a computerized software to measure consultation content. The CN-LOGIT method measures 3 components; event counts, as well as micro and macro level event of consultation style and effect. This method has only been tested on simulated consultation data in the published literature and therefore was not selected for use.

Butow et al (1995) devised the Medical Interaction Process system (MIPS). Similarly to the CN-LOGIT (Butow et al, 1005) this coding tool measures event counts and consultation style and effect. This coding system allow for sequential and parallel coding that provided a multidimensional coded view of the consultation. Also like the RIAS (Roter, 2000), it measures each utterance as a unit of data. It was not selected for the current thesis as it does not provide specific codes to measure the study objectives and it has not been used in published journals to allow the author to assess the practicalities of its use or its reliability.

The OPTION scale devised by Elwyn et al (2003) consists of a skills framework that can be used to assess shared decision making in the consultation setting. The coding toolkit measures whether the problem the patient consults their practitioner with is well defined, what the patient's understanding of their condition or concern is, and evaluates role preferences and the decision made from both the patient and practitioner perspective. The limitations of the coding system is that it can only be applied to single consultation problems not the full content of the consultation. The coding system does not measure empathy or Self-Management Support. This coding system was therefore deemed unsuitable for the coding of routine general practice consultation data.

Advice was sought on coding in consultations from a number of international experts in consultation coding and those who had carried out research on consultation empathy, Self-Management Support and Anticipatory Care. The DAVIS emerged as a recommended and validated coding option as well as the RIAS system noted above.

The Roter's Interaction Analysis system (RIAS) (Roter, 2006), is a coding system that is one of the mostly widely used methods of coding medical communication. RIAS's popularity of use is arguably due to it being regarded as clinically meaningful over a variety of studies (Ong et al, 1995 ;Roter et al, 1997). The RIAS uses a coding system on verbal utterances over 29 task focused categories and 14 socio-emotional categories. Despite this, the RIAS system is not designed in a manner that analyses what type of answer is given to a specific type of question (Sandvik et al, 2002).

The RIAS attempts to address the challenge of interaction analysis and to capture the nature of dialogue in the interaction. This is done by careful consideration of the interactional qualities of the dialogue between patient and practitioner with the added principle that each utterance used in response of other speech is coded. This implicitly notes that interaction analysis in each utterance must be viewed in a sequential and contextual format (Roter et al, 1997). RIAS is also aware of the importance of interactional qualities of dialogue in the verbal coding of the patient practitioner exchange. One negative point to consider however, is that such strict adherence to the manual is contradictory in terms of a more functional approach as seen in conversation analysis (Sandvik et al, 2002).

The RIAS describes communication in units or "utterances" as the smallest measurable unit of speech. Therefore "one unit is equal to one thought" (Roter, 2006). RIAS has 3 main principles: a content criterion, a pause criterion and a criterion based on speaker shift. The pause criterion refers to pauses in natural dialogue but is a function of speech that is hardly noted in RIAS (Sandvik et al, 2002); this is true also of the VERONA-CoDES-CC system. No distinction is made between filled and unfilled pauses.

The pause criterion describes utterances that represent turns that are improper such as "ah", "OK" or "hmmm" are not considered turns. As they do not involved speaker shift (Sandvik et al, 2002). This varies from the VERONA-CoDES-CC system, as with the Verona such speech is coded under BACK CHANNEL (INB) which is as seen as a health provider response that has to be used when the health provider is showing attention to the patient,

and invites further disclosure. It does not have to make explicit reference to the content or the emotion/affect that is currently being discussed in the conversation or hinted to by the patient's cues or concerns (Del Piccolo et al, 2009). As the Verona system codes for such fluency in the conversation, the coding scheme allows for an overall sense of the conversation to be understood, as well as it allows for the personality of the speaker and timing in which both parties establish negotiation to be considered. It also allows for extra information to be gathered about dominance and submissiveness and the abilities of both patient and practitioner in terms of information seeking to be established.

Interruptions are another frequent factor of regular conversation; these are not commented on or coded with either the RIAS system nor the Verona system. It is important to note that leaving such an indicator of conversation out could result in important information being lost about power and control taking within the conversation.

Interruptions should be included in any conversation analysis and looked at on a case by case basis to establish relevance (Sandvik et al, 2002). It is important also to note that within RIAS a number of coding categories are listed under a number of conflicting criteria. As mentioned before for the Verona system, Back Channelling is also referred to in RIAS but holds a meaning similar to that of AGREE (Roter et al, 1997) which in practice and in times when speech with overlap in natural conversation style, determining which of the two codes is most appropriate can be confusing. Other important factors that RIAS mention include the use of open and closed questions; that acknowledge the probing and facilitating nature of the health provider's style. However, RIAS refers to the use of probing questions as a reference to the doctor's intention to gain more information. RIAS does not provide a measure of intention (Sandvik et al, 2002).

Finally the RIAS refers to the empathic process of communication within the patient health professional communication, as seen in the consultation setting. Due to the meaning of empathy being largely undefined, the empathic process in the RIAS is referred to as a process which tries to understand the experiences of another. Therefore empathy is a "statement which (can) paraphrase, interpret, recognize or name the other's emotional state" (Roter, 2006 ;Roter et al, 1997). This meaning of empathy is very narrow, however, in some ways the RIAS coding scheme makes up for this by incorporating empathic understanding in some of its other codes such as "legitimize" and "reassure". However, RIAS does not acknowledge this within its description of the code meanings. Also, RIAS's empathy feature is only scored in terms of what the health professional says. No reference

is made to the understanding shown by the patient for the emotional state of the physician. This may be a feature that would have benefitted being added to the functions of personal remarks such as “greetings” and “returns of friendly gestures” (Roter et al, 1997; Sandvik et al, 2002); such social talk is important in creating a relaxed atmosphere as well as being important to the formation of the patient-practitioner relationship. Nonverbal information that is also missed from the RIAS is crying, however, laughing is included (Sandvik et al, 2002).

Therefore the RIAS coding system was not selected for use within the thesis due to its strict and lengthy categories which would make it difficult to use in real-time and very time consuming to learn and apply to the volume of data available in the current research. The RIAS system also fails to provide a coding system that considers the communication in the context of the sequence in which it is delivered, which would be beneficial to analysis of the empathy and the development of patient-practitioner relationships within the consultation setting. The RIAS also fails to provide a method of coding silence or pauses that occur in the consultation or non-verbal communication. However, this is true of a number of consultation communication coding methods (Conner et al, 2009). Importantly, the RIAS system does not measure Self-Management Support, nor Anticipatory Care, so was not deemed suitable for the measurement of this key aspect of the current thesis.

Other coding systems outlined in Table 5 include the VERONA system (Del Piccolo et al, 2009), Davis Observation Coding system (Callahan and Bertakis 1991). These coding methods were selected and limitations and merits are discussed in detail in Chapter 5.

Table 5: Comparison of coding system considered, tested and reasons for rejection.

Anticipatory Care									
Author	Title	Coding System	Actual Name	Author of Coding Scheme	Content	Advantages	Disadvantages	Used in other journals	Reason for Rejection
Coleman et al (2000)	Using content analysis of video-recorded consultations to identify smokers' 'readiness' and 'resistance' towards stopping smoking	Made up system	unknown	authors	Coding system consisted of four behaviours: mimizing, avoiding, arguing/interrupting, and ignoring behaviour	Coding definitions on figs 1 and 2 in paper More details advice on coding available from the authors	too specific to smoking cessation	no	To specific to stopping smoking Not applicable to current dataset
Self Management Support									
Author	Title	Coding System	Actual Name	Author of Coding Scheme	Content	Advantages	Disadvantages	Used in other journals	Reason for Rejection
Mjaaland et al (2009)	Frequency of GP communication addressing the patient's resources and coping strategies in medical interviews: a video-based observational study	modified version of ROTER = 4 added categories	unknown	Roter, D	Measured the use of GP's use of questions and comments addressing their patients' coping strategies or resources. Videoted 145 consultations (25 GPs). Looked at communication. The whole video was coded for freq of each behaviour category + pos. patterns.	Used whole videos	Time consuming	Yes	Time consuming to learn and to apply to current data
Health Promotion									
Author	Title	Coding System	Actual Name	Author of Coding Scheme	Content	Advantages	Disadvantages	Used in other journals	Reason for Rejection
De Piccolo et al (2009)	Verona Coding of Emotional Sequences (VR-Codes): Cue and Concern Manual 2009.	VERONA	Verona coding Definitions of Emotional Sequences	authors	Uses a conceptual framework looking at the distinction between health provider and patient elicited cue and concerns within the consultations	Uses 4 channels of video for optimal point observation. Well laid out manual of many collaborations	two part - other part still unpublished	no	N/A
Makoul et al (1995)	Health promotion in primary care: Physician-patient communication and decision making about prescription medications, 41 (9), pp1241-1254	Made up Checklist	unknown	authors	Content not present in paper	Can flag events that author wishes to examine	Checklist not available on journal	No	Coding system not published Definition of health promotion not likened to current study objectives to measure Self Management Support and Anticipatory Care
Zandelt et al (2005)	Coding patient-centered behaviour in the medical encounter, Social Sciences, 61, PP661-671.	PBCI	Patient-Centered Behaviour Coding Instrument	authors	PBCI used in conjunction with specialist software- the NOLDUS observer software- the observer software that automatically connects codes	Uses scales and a coding script (present within the paper) Can be used on video or audio consults. Full video examined.	Some conflict on the results about the reliability scores for inhibiting behaviours	No	Not suitable for current data type
In Zandelt et al (2005)	Coding patient-centered behaviour in the medical encounter, Social Sciences, 61, PP661-671.	Eurocommunication Scale	Eurocommunication Scale	Mead and Bower, 2000a	global ratings of the degree of patient centeredness in consults.	Uses easy understandable 5 item scale	Only western country use	Mentioned	Measured patient centeredness but not specific of current objectives on empathy, Self Management Support and Anticipatory Care

Other									
Author	Title	Coding System	Actual Name	Author of Coding Scheme	Content	Advantages	Disadvantages	Used in other journals	Reason for Rejection
De Luisgnan et al (2008)	de Luisgnan S, Kumarapeli P, Chan T, Pflug B, van Vlymen J, Jones B, Freeman GK. The ALFA (Activity Log Files Aggregation) Toolkit: A Method for Precise Observation of the Consultation, J Med Internet Res 2008;10(4):e27	The ALFA Toolkit	The Activity Log Files Aggregation Toolkit	User Activity Recording (UAR) Tool V1.0 De Luisgnan et al 2008	Computerized software that analysis computer mediated consultation observation	Has many functions that work in conjunction to gather data on movement, communication and pattern recognition Offers greater precision of observation in consultations	Expensive. Not compared in the paper with other manual coding systems,	No	Expensive and time consuming to learn Did not measure specifics of: empathy, Self Management Support and Anticipatory Care
Dent et al (2005)	The Cancode interaction analysis system in the oncological setting: reliability and validity of video and audio tape coding, Patient Education and Counseling, 56, 35-44.	Cancode	Cancode	authors	An adaption of CN-LOGIT	A computerized interaction analysis system Looks at the interaction with the consultation under 4 categories: source, content, function, emotion Coded similar to CN-LOGIT Also uses created indicator variables	More time consuming for video coding than for audio coding Used only in actor scenarios	CN LOGIT YES	time restrictions Did not measure specifics of: empathy, Self Management Support and Anticipatory Care
Maguire and Falkner (1998)	How to improve the counselling skills of doctors and nurses in cancer care British Journal of Medicine, 297 (1988), p. 847	Booth Rating Scale	Booth Rating Scale	Maguire and Faulkner (1988)	Codes utterances as units under 3 criteria: form, function and content.	specific criterion	Looks at the interviewer only not the interaction of the consultation	No	Does not code the interaction between patient and practitioner
Stewart et al (2001)	pro the measure of patient-centered communication (MPCC). Patient centered medicine: transforming clinical method, 2001: 269-282.	MPCC	Measure of Patient centered Communication	author	six component patient centered clinic method	Gives comprehensive coding guidelines Explains all the concepts	time consuming	unknown	Had already been applied to current data set in previously published study Did not measure specifics of: empathy, Self Management Support and Anticipatory Care
Roter, D (2006)	The Roter Methods of Interaction Analysis Manual	RIAS	Roter Interaction Analysis System	author	A method of coding doctor-patient interaction during consultations	Well known and used Can be adapted Well laid out coding manual available		YES	Strict and lengthy categories Does not measure Self Management Support or Anticipatory Care

Other									
Author	Title	Coding System	Actual Name	Author of Coding Scheme	Content	Advantages	Disadvantages	Used in other journals	Reason for Rejection
In Ford et al (2000)	The Medical Interaction Process System (MIPS): an instrument for analysing interviews of onologists and patients with cancer, social science and medicine, 50,553-556	CN LOGIT	CN-LOGIT	Butow et al (1995)	Has 3 components: micro analysis, event counts, macro level analysis of consultation style and effect	specific criterion	does not measure items specific to study objectives	YES	Does not measures Self Management Support or Anticipatory Care
Butow et al (1995)	Butow, P.N., Dunn, S.M., Tattersall, M.H.N., Jones, Q.J. Computer-based interaction analysis of the cancer consultation British Journal of Cancer. 1995; 71 (8), pp. 1115-1121	MIPS	Medical Interaction Process System	Ford et al (2000)	An adaptation of Bales Interaction Process Analysis (IPA)	Allows for Sequential and parallel coding, avoids major conflicts Allows for a multidimensiona view of the consultation without data loss. Measures each utterance at a unit. Coding script available	Not mentioned in other journals to test the others use of its flexibility	NO	Does not measures Self Management Support or Anticipatory Care
Elwyn et al (2003)	Shared decision making: developing the OPTION scale for measuring patient involvement, Quality saf Health Care. 2003, 12; 93-99.	OPTION	OPTION scale	authors	Consists of a skills framework used to assess shared decision making in the consultation setting. Measures: if problems are well defined, patient understanding, evaluates role preference, and decisions made from the patient and practitioner perspective.	takes into account both patient and the practitioner	application cannot be applied to every problem that is discussed in a single consultation Not suitable for consultations with more than one patient i.e. Parent and child, patient and carer.	Yes (all involved at least one of the original authors)	Measures shared decision making but not empathy, Self Management Support and Anticipatory Care
Howie et al (2004)	Quality, core values and the general practice consultation; issues of definition, measurement, and delivery. Family practice, 2004; 21: 458-468.	Consultation Quality Index (CQI)	Consultation Quality Index (CQI)	authors in 1999	Measures 3 components; consultation length, how well the patinet knew the doctor, and patient enablement.	validated measure takes into account both patient and the practitioner Aggregates the scores of all 3 components	Self reported limitations on accuracy of patient enablement scores for patients where english is not their first lanuage. Lacks a specific empathy component	Yes	lacks a specific component measuring empathy

5.3.1 The Davis Observation Code (DOC) Rationale

A key issue of this research project was finding a suitable way of measuring Self-Management Support. This process proved difficult and as a result a compromise was met within the use of the Davis Observation Coding System (Callahan and Bertakis 1991).

The Davis Observation Coding system (Callahan and Bertakis 1991) was selected for use within the current research project on the basis that it is a validated and reliable measure that codes direct observations that can be made within the consultation. From the 20-item coding system there is the provision to code the discussion of health promotion and preventative services as well as codes that can be considered Self-Management Support such as discussion on exercise, smoking behaviour, nutrition and substance use that requested some form of behaviour change or consideration.

At the time when a coding system was being selected, there were no coding systems that measured self-management in a consultation context alone. Self-Management or Self-Care appears in very few published studies and tends to be associated with general ideas of health promotion and Self-Management Support. These papers tended to look at single disease focused data and specialist condition care (Ishikawa et al, 2009; Bylund et al, 2009; Corbett et al, 2009; Boren et al, 2009; Sakraida and Robinson, 2009; Whitely et al, 2009).

The decision to use the Davis Observation Code was made on the basis that it was a simple method that could be applied relatively quickly to the volume of videoed consultations available. The additional codes added by the current research allowed the system to be moulded to reflect the working definition of Self-Management used within the thesis without reducing the efficiency of the system itself.

The current thesis defined the terms Self-Management Support as the process put in place to allow patients to maintain their health, prevent illness, seek treatment or support, manage symptoms of illness and side effects of treatment, accomplish recovery and rehabilitation and manage the impact of chronic illness and disability on their lives and independence (Alliance of Self- Care Research 2012).

It has been suggested that within primary care consultations, Self- Management Support by the healthcare practitioner should help patients monitor their condition(s) and deal with

flare up, improve lifestyle behaviours, adjust medication, and access community Self-Management Support (Department of Health 2005a; Riegel et al 2009).

As for the term Anticipatory Care, it is considered within the current research as a type of Self-Management Support that focuses on health promotion. The common types of health promotion that are likely to be undertaken within general practice consultations include discussions about behaviour and lifestyle change. This can include making changes to the patient's weight management, exercise routine, diet (nutrition), smoking habits, alcohol intake and other types of substance use (Callahan and Bertakis 1991). It is a concept that includes health improvement activities delivered within or in association with health care to assist patient's adoptions and maintenance of one to more behaviours concerning their future health and well-being (NHS Scotland 2008; Watt et al. 2009).

This definition of Self-Management Support and the associated areas of discussion that have been defined by the literature on primary care has influenced the search for an appropriate coding tool that could address this topic and the assumptions surrounding it. Therefore, the literature on Self-Management Support had resulted in the a search for a coding tool that measures the behaviours of GPs in routine general practice consultations. The coding system should include codes specific to health promotion activities and anticipatory approaches to managing conditions and potential lifestyle behaviour change i.e. weight, nutrition and substance use. The coding system should also aim to measure current and future well-being of the patient such through codes for disease risk, patient's health believes and knowledge of their condition as well as the patient's ability to follow a suggest health plan or ability to sustain medication compliance.

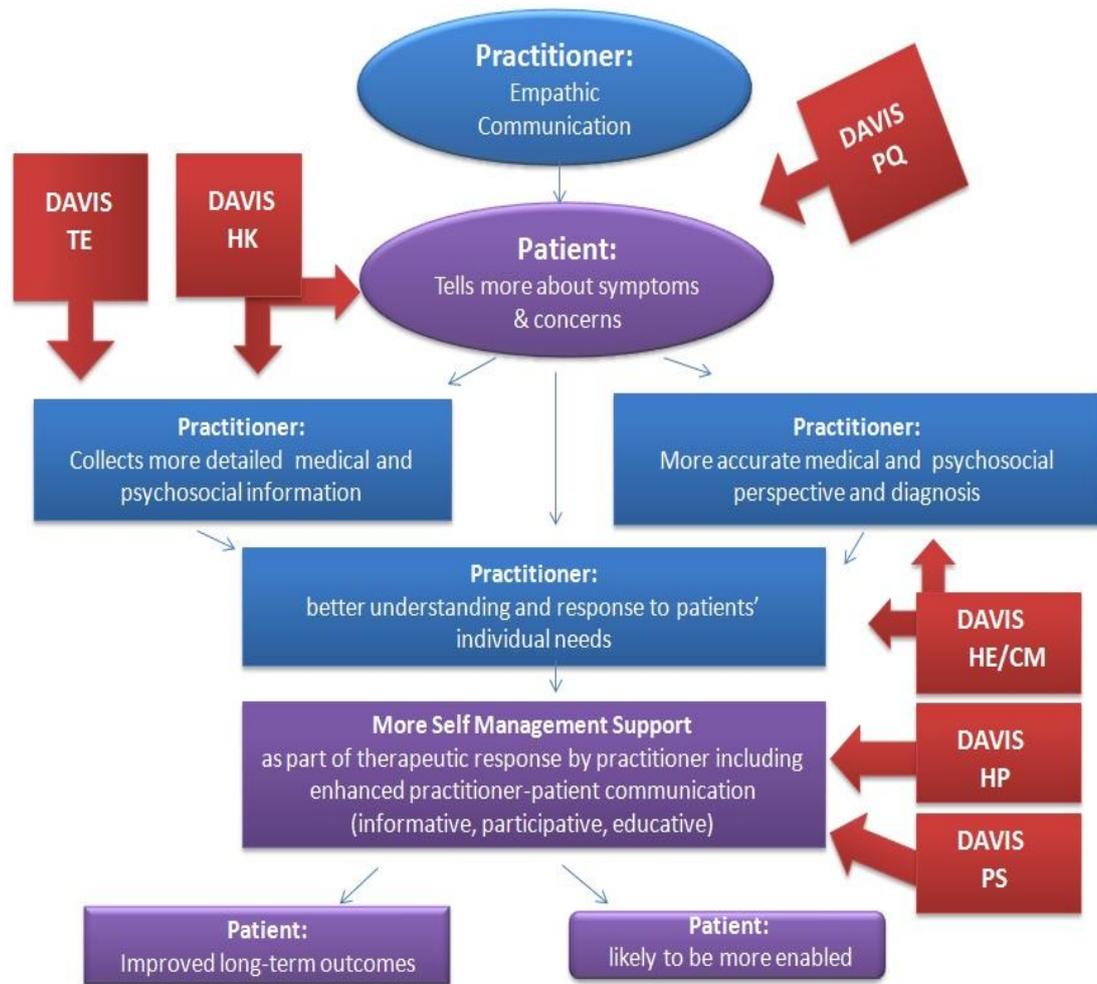


Figure 14: Revised adaptation of Neumann's effect model of empathic communication focusing on the role of the DAVIS coding system.

Figure 14 highlights the parts of Self-Management Support that are measured by the use of the DAVIS coding system. Self-Management Support is considered to be a combination of a group of seven codes deemed by the coders (JMM & SM) as being related to Self-Management Support within the consultation setting. These codes were; Treatment Effects, Health Knowledge, Patient Question, Compliance, Health Education, Health Promotion and Preventative Services. The rationale for this decision and how this relates to the empathy effects model and the research objectives is given below.

In the effect model of empathy and Self-Management Support, The Davis codes can be seen as relating to Self- Management Support in the following ways.

1. Treatment Effects (TE): relates to the practitioner collecting more detailed information about the results of any on-going therapeutic intervention (which could include self-management activities).

2. Health Knowledge (HK): relates to if the GP asks or patients spontaneously offers what patient knows or believes about health or disease, which would give the practitioner a better understanding of the patient's individual needs.

3. Patient Questions (PQ): Patient asks question of physician about diagnosis, treatment, side effects, history, or disease. This could enhance communication (informative, participative, and educative).

4. Compliance (CM): Physician inquiring about or discussing what patient is currently doing or has done recently regarding previously requested behaviour taking medication, changing nutrition, or doing exercise or other behaviour change. This clearly relates directly to Self- Management Support in the above model.

5. Health Education (HE): Physician presents information regarding health to patient. This may include information regarding diagnosis, aetiology, drug effects and treatment, or accident prevention. This includes changing behaviour around taking medication. Includes any explanation of the procedure itself, its side effects, drug interactions, or contradictions. May also include statements about health attitudes and motivation. Again this may clearly relate directly to Self- Management Support.

6. Health Promotion (HP): Physician asks for a change in patient's behaviour in order to increase or promote patient's health (including accident prevention). Includes mental health, smoking, alcohol or drug misuse, diet, exercise, weight management. Again, directly related to Self- Management Support.

7. Preventative services (PS): Physician discusses plans or performs any screening task associated with disease prevention or takes history on disease prevention. This includes cholesterol tests. Again clearly related to Self- Management Support

Anticipatory Care is considered to include (a sub-code of Self- Management Support) 2 codes; Preventative Services and Health Promotion.

5.3.1.1 Other coding schemes considered

The Roter Interaction Analysis System (RIAS)(Roter 2006) was considered as a potential coding system for the current data. However, it was not selected for use as it did not specifically measure Self-Management Support or Anticipatory Care. The RIAS is an a complicated and time consuming coding scheme due to the length and breadth of coding options that it does include. As the measure of Self-Management Support and Anticipatory Care were key objectives of the study as well as the objectives to examine their frequency in over 400 general practice consultations a shorter more direct method of measuring these terms was sought and found in the form of the Davis Observational Code (DOC).

The Davis Observational Code (DOC) provided a 20-item coding alternative that included the provision of coding health promotion and preventative services within the consultation setting. Both health promotion and preventative services are topics discussed within general practice consultation that facilitate Self-Management Support and Anticipatory Care. Further to these codes was the option to code exercise, smoking, nutrition and substance use of the patient group. These topics were also considered relevant topics to the measurement of Self-Management and Anticipatory Care. Therefore it was concluded that for the current data set and thesis objectives that the Davis Observation Code (DOC) would be the most time effective method of coding.

5.3.2 The Verona-CoDES-CC Rationale

The Verona coding system was used in the thesis to explore empathy within the consultation. The Verona coding system is a relatively new coding system that provides a framework to code patient cues and concerns, both verbal and nonverbal within the consultation and the responses the health provider (GP) gives. The coding system also allows the GP (health provider's) responses to be measured. This coding system will allow for communication cues, concerns and responses to be measured in general practice consultations. For the purpose of the research objectives the coding was undertaken on consultations by GPs who either scored high or low in perceived empathy by their patients in high and low deprivation areas.

The use of an observer rated measure of empathy (Verona system) to code consultations wherein empathy has been scored by a patient rated measure provides an opportunity to

compare patient reported and directly observed measures of empathy in the consultation. This comparison will also explore the importance of perceived and observed empathy in clinical consultations.

As a measurement tool the Verona coding system provides a measure of communicative sequences. That takes into account both immediate and delayed responses. The system allows cues and concerns to be coded separately from health provider responses, this technique can reduce coder influence in that the nature of the cue or concern is still noted and when it is picked up on can be coded separately (Del Piccolo et al, 2004).

The Verona system is designed to code in real time providing the opportunity for the coder to code the cue or concern in the immediate context of the consultation and the effect the response from the health provider has therefore providing face validity. A framework was also provided to code non-verbal behaviour. The authors of the Verona system make the point that the coding system is not hierarchical but rather descriptive (Del Piccolo et al, 2009).

The Verona coding manual does not provide an assessment of the types of codes; there are no good or bad responses, just a description of the codes type and the opportunity for the coder to consider its appropriateness in the context of the conversation. The analysis of appropriateness should be empirical and be considered in relation to outcome variables such as patient satisfaction, reduction or change in symptom. The fact that the system provides a means to consider analysis on the context of the consultation as well as the sequence in which each unit of speech or cue is given allows for the patient's experience of being listened to and understood to be considered. Further to this the type of cues and concerns that the patient uses can be considered both in their factual and affective merits. The authors of the coding system point out that they believe that appropriateness is achieved when both the factual and the affective aspects of the patient's concern is addressed and that is why they have included the opportunity to code this distinction (Del Piccolo et al,2009).

The VERONA was specifically used to give objective information on how patients rated the consultations using the CARE measure. Although purported to be a measure of empathy, it could be that patients who were satisfied by the consultation (i.e. if the doctor gave a lot of Self-Management Support) might rate the CARE Measure items highly. Thus

the objective measure was used to try to ‘validate’ whether patients ratings of the GP on empathy were actually based on an aspect of empathy we could measure objectively rather than on practitioner Self-Management Support alone. Since VERONA measured the detection of emotional cues and the type of response, but did not measure Self-Management Support, it seemed ideal for this purpose.

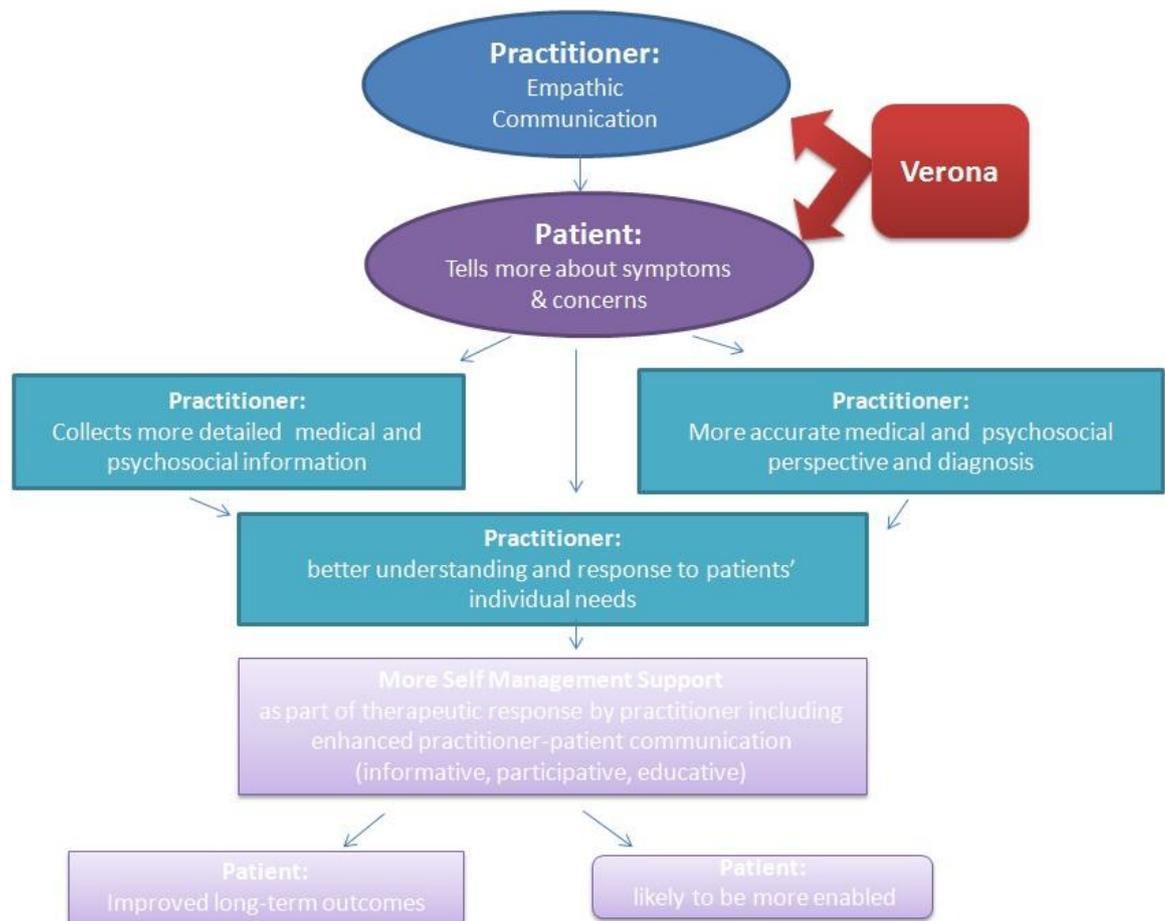


Figure 15: Revised adaptation of Neumann's effect model of empathic communication focusing on the role of the VERONA coding system.

As indicated in the conceptual model (Figure 15), empathy may be integral to the amount and type of Self-Management Support given by GPs in the consultation, but to date mainly patient reported measures of empathy have been used in primary care research. In the current thesis, the CARE Measure had been used in the original study and although well-validated in other ways, no previous work had compared CARE Measure scores (which are patient-rated) with observer-rated measures of empathy or related concepts (distinct from Self-Management Support). The research thus included the opportunity to test the Verona system, an objective measure of practitioners responses to emotional cues and concerns alongside patient reported empathy.

5.3.3 The Wider Context

The literature on empathy and empathic communication in the consultation however has shown no research comparing the patient's perceptions of empathy with an observer rated measure of empathy. However, there is a small amount of evidence on the patient's perspective of empathy, and more specifically within a comparable general practice setting. However, this literature tends to focus on specific or single conditions (Slort et al, 2011; Lundstrom et al, 2001; Kehler et al, 2008) and the studies have all been conducted outwith the United Kingdom. Therefore, with the thesis objectives in mind a decision was taken to explore the unanswered research question by both comparing the patient and the observer's perspective of empathic communication within general practice consultations. This comparison was also carried out in high and low deprivation patient groups to explore the potential for further differences between the varying needs of the patient groups. The VERONA coding system alongside the CARE measure coding system provided the observer and patient perspectives of empathy in the consultation respectively. The use of the VERONA coding system was also selected on the basis that access to Professor Gerry Humphris (GH) (an originator of the system from St Andrew's University) would allow the coders to learn how to use the coding scheme.

5.4 Transcription Work

The videoed consultations were transcribed verbatim using the Jefferson Notation Technique (Jefferson 2004). The transcription work was required to facilitate the use of the Verona Coding definitions of Emotional Sequences for Cues and Concerns (Verona-CoDES-CC)(Del Piccolo et al. 2009).

The Jefferson Notation Technique

The Jefferson Notation Technique (Jefferson 2004) is a form of conversation analysis that takes into account how the conversation is delivered (i.e. overlap, delay, and emphasis). These features are useful for understanding how the conversation is relevant in one way or another to the parties involved in the interaction (Jefferson 2004).

Transcription Process

The transcription process involved each of the videoed consultations used within the Verona analysis being transcribed verbatim. This was a time consuming process which involved coder 1 (JMM). A total of 140 transcripts were compiled in total, some of which do not feature within the analysis but were used within the initial learning process using the Verona coding system.

Each of the transcripts was coded on paper copies of the transcripts by coders 1 (JMM) and 2 (MH) using the guidelines outlined by the Verona coding system. Within the early stages of coding, inter-rater reliability was carried out in cycles to ensure continuity and quality of coding between the coders. The transcription work was ongoing between May 2009 and October 2010. The results of the inter-rater process are outlined within this chapter, and results of the inter-rater reliability for both the Davis and Verona coding system are detailed in chapters 6 and 10 respectively.

Inter-Rater Reliability; Cohen and Davis Methods

Two methods of inter-rater reliability were employed within the thesis; the methods are Cohen's Kappa and the Callahan et al (Callahan and Bertakis 1991) method which is also referred to as the Davis method.

The decision to use both the Cohen's Kappa and the Davis method of inter-rater reliability (IRR) as outlined by Callahan et al (Callahan and Bertakis 1991) provided the most accurate and thorough measure of the coders reliability. Cohen's kappa is a well known and used method of measuring inter-rater reliability, however it the use of the Davis method that provided a more rigorous measure of accuracy. As the Cohen's Kappa takes into account the number of zeros or number of times neither coder selects a code, this can result in an inflated inter-rater reliability result between coders and suggest a higher degree of accuracy when no coding is being undertaken. The alternative Davis method does not take zero or no codes into account therefore removing the danger of an inflated result and only counting coder accuracy when a code is applied.

5.4.1.1 Cohen's Kappa

Cohen's Kappa coefficient (Cohen 1960) is a statistical measure of inter-rater agreement or inter-annotator agreement for qualitative (categorical) items (Figure 16). This agreement is calculated on two binary variables to measure the amount of agreement between two individuals.

$$\kappa = \frac{\Pr(a) - \Pr(e)}{1 - \Pr(e)}$$

Figure 16: Cohen's Kappa (Orlowski et al. 2010)

To achieve Cohen's Kappa scores for two coders, the measure takes a percentage of the overall data values that have been recorded and adjusts these values in accordance with the amount of agreement that could be expected due to chance alone (Cohen 1960). The raters are classified as two objects or categories for example coder 1(JMM) and coder 2 (MH). This method was analysed by SPSS version 15.0. In total coders 1 and 2 coded 20 consultations using the Davis method and a further 20 consultations using the Verona coding scheme to measure inter-rater reliability, the results of this work can be found in chapter 6 and 10 respectively.

5.4.1.2 Callahan et al (Davis Method)

The Callahan et al (Callahan and Bertakis 1991) method calculates inter-rater reliability by dividing the number of agreements between the raters by the total number of agreements and disagreements (Callahan and Bertakis 1991). In this method, the non-occurrence of codes in this case Cues/Concerns or Health Provider Responses are excluded from the calculation (i.e. if raters record zero for the occurrence of the variable being measured, this is not included in the count and such incidents are recorded as 'no data').

In this way, the IRR calculates the % agreement between two raters on the occurrence of the item being investigated.

Across both Cohen's Kappa (Cohen 1960) and the Callahan et al (Callahan and Bertakis 1991) inter-rater reliability method;

- an excellent IRR is a score between 0.75 and 1.00
- a good IRR is a score between 0.60 and 0.74
- an average IRR is a score between 0.40 and 0.59
- And a poor IRR is a score of 0.39 and below (Flies 1981).

5.5 Analysis of key confounders

The results of the Davis (Chapter 7) and the Verona-CoDES-CC (Del Piccolo et al. 2009) system (Chapter 11) coding results were also examined to take account of possible confounders using logistic regression measured by SPSS v18.0.

5.5.1.1 Logistic Regression

Logistic Regression calculates the probability of an occurrence of an event by fitting data to a logistic function i.e. it predicts how likely an event will occur based on information or variables (McQueen and Knussen 2006).

$$\ln\left(\frac{\hat{p}}{1-\hat{p}}\right) = B_0 + B_1X$$

Figure 17: Logistic Regression Diagram (McQueen and Knussen 2006)

An example of logistic regression can be seen in one study whose goal is to model the response to a drug, as a function of the dose of the drug is administered. The target (dependent) variable, (response) has a value 1 if the patient is successfully treated by the drug and 0 if the treatment is not successful.

Thus the general form of the model is:

$$\text{Response} = f(\text{dose})$$

Figure 18: Response model

The input data for Response will have the value 1 if the drug is effective and 0 if the drug is not effective. The value of Response predicted by the model represents the probability of achieving an effective outcome.

5.5.1.2 Analysis of key confounders analysis process

The list of potential confounders was analysed across separate models. The models controlled for the following variables;

Davis Data

Model 1 controlled for age and gender.

Model 2 controlled for age, gender multiple morbidity (MM) and PHQ-9 and anxiety.

Model 2b controlled for age, gender, rating of health in past year, PHQ-9 and anxiety.

Model 2c controlled for age, gender, rating of health in past year, duration of symptoms, PHQ-9 and anxiety.

Verona Data

Model 1 controlled for age, gender, SIMD, Multiple Morbidity (MM) score, and the reason for consultation being an emotional problem.

These lists of potential confounders were selected based on variables shown to be significantly different between the high and low groups in univariate analysis i.e. significant differences in the amount of reported anxiety.

It is important to note that the outputs presented in the tables (Verona Chapter 11; Appendix I) come from individual regression models i.e. the list of potential key confounders was compared with total number of Cues in one regression, then total number of Concerns was run against the list of potential key confounders in a separate regression and so on until all variables had been tested against the list.

Both the Verona and the Davis data were analysed using logistic regression measured using SPSS v18.0. It is a rule of thumb when using regression analysis that the number of confounders per number of cases is taken into account. A minimum of 10 events per independent variable has been recommended. The data within this analysis fulfil this recommendation.

The results tables for both the Davis and the Verona analysis of confounders can be seen within their respective appendices G and I, and the results are discussed in their respective chapters (Chapters 7 and 11).

Chapter 6: Methodology; the learning, coding and Inter-Rater Reliability process for the Davis Observation Code (DOC)

6.1 Summary

Learning to use and developing the DOC

This chapter looks at the Davis Observational Coding system (DOC), which is a 20 item direct observation code that is used to determine the content of the patient-physician encounter.

In learning to use the DOC, 3 exercises were carried out to assess inter-rater reliability. During the process of becoming familiar with the DOC additional codes were developed and also assessed for inter-rater reliability. Overall the coders (JMM and SM) achieved an excellent agreement rated of 0.75 using the Davis method and 0.85 according to Cohen's Kappa.

6.2 Inter-Rater Reliability cycles and results

The inter-rater reliability results showed that a high IRR score was achieved by the third cycle of data that was examined. There was a small reduction on the achieved IRR in the second cycle that was improved on in the third cycle. This work also showed that the number of codes can vary across the low and high deprivation groups.

It was also found that those consultations that were rated as within the mid CARE category proved the most challenging to code due to their complicated content and range of topics involved.

6.3 Theoretical background of the Davis Observation Code (DOC)

The consultation is viewed in real time to gain an understanding of what occurred during its time frame. The consultations are divided up into time segments (30 second intervals) within which the number of occurrences between the patient and physician are coded to determine the encounter's content. The Davis Observation Code (DOC) (Callahan and Bertakis 1991) provides a systematic approach to evaluate the communication that has occurred as well as procedures, planning and general consultation content.

The Davis system was developed by its originators to measure the content of the medical consultations, the behaviours displayed by both the patient and the physician relevant to diagnosing and treating illness and modifying unhealthy life styles (Callahan and Bertakis 1991). In particular the DOC contains codes for measuring four key physician behaviours related to disease prevention and health promotion: preventative services, health education, health promotion and compliance checking. These items are relevant to one of the thesis's aims which is to assess the nature, type and frequency of Self-Management Support (including Anticipatory Care) in general practice consultations in high and low deprivation groups (objective 1).

Table 6 shows the operational definitions and coding options from the Davis Observation Code (Callahan and Bertakis 1991).

Table 6: Operational definitions from the Davis Observation Code (DOC)

CH	Chatting: Physician or patient discussing topics not related to current visit, e.g. small talk or humour which might be used to build rapport.
SI	Structuring Interaction: Physician or patient discussing what is to be accomplished in current interactions; or physicians asks patient for any questions. Excludes requests by physician for patient to do anything which is part of the physical exam or is done to prepare for physical exam. Excludes planning treatment. Can include statements describing what will be done in the physical exam.
CO	Counselling: Physician discuss interpersonal relations or current emotional state of patient or patient's family, provides reassurance, advice or support or uses self-disclosure to reassure patient. Excludes 'advice' asking for health behaviour change (see Health Promotion). Physician restates what patient has said (in regards to above) or reflects on the patient's nonverbal behaviour.
HT	History Taking: Physician inquiring about or patient describing details related to the current chief complaint or to prior illnesses or treatment. Includes physician reading medical record. Excludes patient responses to current treatment: see Treatment Effects (TE). Includes physician asking if physical exam manoeuvre produces pain or felling describes in chief complaint or history.
FI	Family Information: Physician inquires about or discusses family medical or social history or about current functioning of family. (Family can include unrelated significant others from social or work groups.)
TE	Treatment Effects: Physician inquires about or patient describes results of ongoing therapeutic intervention for current episode of problem.
EF	Evaluation Feedback: Physician tells patient about results of history, physical lab work etc (includes telling that lab test are incomplete, inconclusive etc.). Results can be preliminary or speculative.
PE	Physical Examination: Physician conducts any aspect of physical examination of patient including taking samples for lab tests of diagnostic procedures; also includes asking patient to repeat for physical exam, telling patient to do something in physical example, or asking if manoeuvre hurts or is tender.
PQ	Patient Question: Patient asks question of physician about diagnosis, treatment, side effects, history, or disease.
CM	Compliance: Physician inquiring about or discussing what patient is currently doing or has done recently regarding previously requested behaviour taking medication, changing nutrition, or doing exercise or other behaviour change.
PS	Preventative Services: Physician discusses plans or performs any screening task associated with disease prevention or takes history on disease prevention. For example: Pap smear, breast exam, vaccination, hip click exam, testicular exam, rectal exam, thyroid exam, or scoliosis exam. (See Preventative Services sheet.)
HE	Health Education: Physician presents information regarding health to patient. This may include information regarding diagnosis, aetiology, drug effects and treatment, or accident prevention. May also include statements about health attitudes and motivation.
HK	Health Knowledge: Physician asks patient spontaneously offers what the patient knows or believes about their health or disease (opposed to patient's own treatment history which is coded as History Taking).
HP	Health Promotion: Physician asks for a change in patient's behaviour in order to increase or promote patient's health (including accident prevention). This excludes changing behaviour around taking medication. Any explanation of the procedure itself, its side effects, drug interactions, or contraindications should be coded HE. Excludes asking patient to take medication.
PT	Planning Treatment: Physician prescribes a medication, diagnosis or treatment plan to be followed other than behaviour change (see Health Promotion). Includes physician asking is prescription refill is needed.
EX	Exercise: Any question about or discussion of exercise.
SM	Smoking Behaviour: Any question about or discussion of smoking or other use of tobacco.
NU	Nutrition: Any question about or discussion of nutrition. Includes discussion of diet and/or food intake (excludes questions regarding only appetite, which is coded as history).
SU	Substance Use: Any questions about or discussion of drinking alcohol or use of other substance.
PR	Procedure: Any treatment or diagnosis procedure done in office, e.g. removing skin tags, warts, drawing blood, casting, dressing, debriding etc. Excludes preventative services such as Pap smear.

The Davis system, does not acknowledge non-verbal cues such as crying, silence or the patient avoiding answering the question or disrupting the consultation by avoidance of answering questions presented to the patient by the physician. However, to acknowledge occurrences within the consultation that are applicable to the current data set, a number of sub categories were employed to note occurrences that are more common. These include blood pressure checking, sick line requests, cholesterol and weight checks and computer entry. These additional codes will be reviewed later within this chapter in more detail at the point in the learning cycles they were added to the research.

The DOC system also provides an opportunity to yield more information from the consultation which provides an insight into what is going on within the consultation setting. This in turn can lead to an overview of how the consultation time is structured. This will prove helpful to determine if there are differences between the various patient groups within the current study and across the different deprivation groups.

The context of the Davis Observation Code (DOC) and Self-Management Support within the current study

Within the current research Self-Management Support is referred to within the consultation setting as discussions involving:

- Treatment Effects (i.e. any discussion or feedback about the patients current treatment plan)
- Health Knowledge (i.e. what the patient believes about their health)
- Patient Questions (i.e. any questions the patient may wish to discuss with the GP)
- Compliance (i.e. consultation discussions surrounding the patient's compliance with the treatment plan or medication prescribed)
- Health Education (i.e. any information the GP gives the patient to facilitate decision making)
- Health Promotion (i.e. any advice or information the GP gives the patient regarding behaviour change requests)
- Preventative Services (i.e. recording of blood pressures and cholesterol checks)

Anticipatory Care within the consultation setting refers to any discussion on Health Promotion and Preventative Services such as blood pressures and cholesterol checks. More details can be found in Appendix L.

Inter-Rater Reliability overview

The current thesis sampled GPs selected from the original data set by Mercer, Watt and Little's (Mercer et al. 2012). From this sample a random selection (using SPSS) of 20 patient videos were selected. The first 5 consultations are not included within the inter-rater reliability calculations however; they are still relevant to how the Davis Observation Coding system was learned. This data are seen within the practice data section.

Thereafter, the sets of 5 consultations that were selected are referred to as Data sets 1, 2 and 3 respectively.

6.3.1.1 Inter-Rater Reliability; Sampling Method (practice data)

The information on how to use the Davis coding system was taken from a paper by Callahan et al (Callahan and Bertakis 1991). The coding involved within the first 5 consultation involved 2 meetings between JMM (coder 1) and SM (coder 2), within which coder 1 (JMM) and coder 2 (SM) watched the consultation videos together and discussed how the consultations should be coded.

6.3.1.2 Inter-Rater Reliability: Data Set 1

The initial meeting also outlined the time frame in which to undertake further coding by both coders independently (Data Set 1).

6.3.1.2.1 Sample Characteristics

The second meeting discussed Data set 1 which included 5 consultations that were coded independently by coder 1 (JMM) and coder 2 (SM). The coders completed these transcripts separately and met later to compare their results and discuss any coding problems or queries.

Data Set 2 included 5 consultations. During the coding of data set 2 an additional 2 coding subcategories 'Doctor Line' and 'Computer Entry' were added. These additional codes were added as incidents of these events occurring were regular within the videoed consultations. This discussion of coding and additional codes took place over two further meetings between coder 1 (JMM) and coder 2 (SM) between March and July 2010.

This sample of 5 consultations represented 3 patients from high deprivation practices and 2 from low deprivation practices. The patient sample group had an average age of 66.8 years (ranging from 55 years to 75 years) which was made up for 1 male patient and 4 female patients. Data set 3 is outlined in section 6.3.2.4.

6.3.1.2.2 Sample Results

The coding responses for the 20-item Davis Coding system were coded and measured to determine the inter-rater reliability (IRR) for the first 5 consultations.

Table 7: IRR Data set 1

Code	Occurrences	Davis Method	Cohen's Kappa
Chatting (CH)	6	0.16	0.27
Structured Interaction (SI)	1	0	NK
Counselling (CO)	1	0	NK
History Taking (HT)	57	0.59	0.48
Family Information(FI)	7	0.28	0.42
Treatment Effects (TE)	4	0	NK
Health Knowledge (HK)	0	NK	NK
Evaluation Feedback (EF)	8	0.25	0.37
Physical Examination (PE)	25	0.80	0.85
Patient Question (PQ)	7	0.14	0.21
Compliance (CM)	0	NK	NK
Preventative Services (PS)	0	NK	NK
Health Education (HE)	21	0.33	0.40
Health Promotion (HP)	0	NK	NK
Planning Treatment (PT)	52	0.36	0.56
Exercise (EX)	1	1.00	1.00
Smoking (SM)	2	0.50	0.66
Nutrition (NU)	0	NK	NK
Substance Use (SU)	1	1.00	1.00
Procedure (PR)	2	0.50	0.66
OVERALL	195	0.53	0.67

*Total Number of occurrences coded by at least one coder

N/K = No Kappa Available

The results in Table 7 show that an excellent (definitions of IRR score cut off point can be found within the methodology section) inter-rater reliability was achieved for the codes for Physical Examination, Exercise and Substance Use across both IRR methods. An average IRR was achieved for; History Taking, Smoking and Procedure on both IRR methods. This was also true for the codes; Family Information and Planning Treatment using the Cohen's Kappa method. A poor inter-rater reliability was recorded for Chatting, Evaluation

Feedback and Patient Question for both methods, as well as Family Information using the Davis method.

No inter-rater reliability was recorded for codes: Structured Interaction, Counselling, Compliance, Preventative Services, Health Promotion and Nutrition across both IRR methods. This was due to these codes having been recording one or less occurrences within the data set (Data Set 1).

Overall an average inter-rater reliability of 0.53 was recorded using the Davis method and a good inter-rater reliability score of 0.67 was recorded according to Cohen's Kappa.

6.3.1.3 Inter-Rater Reliability: Data Set 2

The third meeting reviewed the second attempt at coding the consultations and allowed for a review of the codes that had been used which resulted in further subcategories being added (Data Set 2).

This set of 5 consultations is referred to as data set 2. As before this data set was coded separately by coder 1 (JMM) and coder 2 (SM) then the results of the coding system were discussed. This second cycle of coding saw the addition of a further two subcategory codes Weight (a subcategory of Health Promotion) and Blood Pressure (a subcategory of Physical Examination). This coding work took place between August and October 2010.

6.3.1.3.1 Sample Characteristics

This random sample of 5 consultations represented 2 patients from high deprivation practices and 3 patients from more low deprivation practices. The patient group had an average age of 50.2 years (ranging between 26 and 78 years of age) which included 2 male patients and 3 female patients. The inter-rater reliability measured used can be found in more details within the methodology chapter (Chapter 5).

6.3.1.3.2 Sample Results

As before, reliability was calculated using two separate methods and details can be found within the methodology section (Chapter 5).

Table 8: IRR Data set 2

Code	Occurrences*	Davis Method	Cohen's Method
Chatting (CH)	22	0	NK
Structured Interaction (SI)	1	0	NK
Counselling (CO)	18	0.38	0.51
History Taking (HT)	65	0.69	0.65
Family Information(FI)	16	0.37	0.49
Treatment Effects (TE)	0	NK	NK
Health Knowledge (HK)	0	NK	NK
Evaluation Feedback (EF)	8	0.62	0.75
Physical Examination (PE)	19	0.79	0.86
Patient Question (PQ)	18	0.50	0.62
Compliance (CM)	0	NK	NK
Preventative Services (PS)	0	NK	NK
Health Education (HE)	23	0.52	0.63
Health Promotion (HP)	12	0	NK
Planning Treatment (PT)	42	0.60	0.64
Exercise (EX)	0	NK	NK
Smoking (SM)	1	1.00	1.00
Nutrition (NU)	2	0	NK
Substance Use (SU)	0	NK	NK
Procedure (PR)	0	NK	NK
TOTAL	247	0.50	0.64

*Total Number of occurrences coded by at least one coder
N/K = No Kappa Available

The results in Table 8 show that an excellent IRR was achieved for Physical Exam and Smoking on both IRR methods. A good IRR score was achieved for History Taking, Evaluation Feedback and Planning Treatment on both IRR methods. This was true for Patient Question and Health Education according to Cohen's Kappa. An average inter-rater reliability was achieved for Family Information according to Cohen's Kappa. A poor inter-rater reliability was achieved for Chatting, Structured Interaction, Health Promotion and Nutrition within the Davis IRR method.

Finally there was no inter-rater reliability recorded for Treatment Effects, Health Knowledge, Compliance, Preventative Services, Exercise, Substance Use and Procedure across both IRR methods. This was true also for Chatting, Structured Interaction, Health Promotion and Nutrition across Cohen's Kappa. This was due to these codes recording one or less occurrences within the data set (Data Set 2).

Overall an average inter-rater reliability score of 0.50 was recorded using the Davis method and a good inter-rater reliability score of 0.64 was recorded according to Cohen's Kappa.

6.3.1.4 Inter-Rater Reliability; Data Set 3

At this stage it was agreed that more coding would be undertaken (Data Set 3) before inter-rater reliability was checked.

6.3.1.4.1 Sample Characteristics

The third set of 5 consultations was randomly selected and is referred to as data set 3. This third cycle of coding saw one further subcategory added; Cholesterol (a subcategory of Preventative Services). As with the two previous data sets these consultations were coded separately by coder 1 (JMM) and coder 2 (SM), with the results being discussed thereafter. This work was undertaken between October and November 2010.

The coding was undertaken in line with the work carried out in data sets 1 and 2. This sample of 5 consultations represented deprived practices. The patient group had an average age of 48.6 years (ranging between 17 and 76 years of age) which included 2 male and 3 female patients.

6.3.1.4.2 Sample Results

The results in Table 9 measure the inter-rater reliability of data set 3.

Table 9: IRR Kappa Data set 3

Code	Occurrences*	Davis Method	Cohen's Method
Chatting (CH)	4	1.00	1.00
Structured Interaction (SI)	0	NK	NK
Counselling (CO)	5	1.00	1.00
History Taking (HT)	67	0.56	0.50
Family Information(FI)	19	0.89	0.93
Treatment Effects (TE)	2	1.00	1.00
Health Knowledge (HK)	1	1.00	1.00
Evaluation Feedback (EF)	4	0.75	0.85
Physical Examination (PE)	9	0.88	0.93
Patient Question (PQ)	8	0.50	0.64
Compliance (CM)	2	0.50	0.66
Preventative Services (PS)	1	1.00	1.00
Health Education (HE)	8	0.87	0.92
Health Promotion (HP)	12	0.91	0.95
Planning Treatment (PT)	34	0.85	0.89
Exercise (EX)	3	0.66	0.79
Smoking (SM)	9	1.00	1.00
Nutrition (NU)	1	0	NK
Substance Use (SU)	4	1.00	1.00
Procedure (PR)	0	NK	NK
TOTAL	193	0.75	0.85

* Total Number of occurrences coded by at least one coder
 N/K = No Kappa Available

The results in Table 9 show that an excellent inter-rater reliability was achieved for Chatting, Counselling, Family Information, Treatment Effects, Health Knowledge, Evaluation Feedback, Physical Exam, Preventative Services, Health Education, Health Promotion, Planning Treatment, Smoking and Substances Use.

A good inter-rater reliability was achieved for Patient Question and Compliance according to Cohen's Kappa. A good inter-rater reliability was also achieved for Exercise within the Davis IRR method. An average IRR was achieved for History Taking across both methods, with an average IRR also being achieved for Patient Question and Compliance within the Davis IRR method as well as a poor IRR score was also recorded for Nutrition.

No inter-rater reliability was recorded for Structured Interaction and Procedure across both IRR methods, there was also a poor IRR recorded for Nutrition according to Cohen's Kappa. This was due to these codes recording one or less occurrences within the data set (Data Set 3).

Overall an excellent inter-rater reliability score of 0.75 was recorded using the Davis method and an excellent inter-rater reliability score of 0.85 was recorded according to Cohen's Kappa.

6.3.1.5 Inter-Rater Reliability; Additional Codes

As mentioned within the previous section the Davis Observation Code(DOC) (Callahan and Bertakis 1991) does not acknowledge non-verbal Cues. During the inter-rater reliability stages of coding the consultations there were also a few practical occurrences within the videos that were not accounted for by the codes within the DOC system.

It was decided that in order to include these themes from the consultations within the current data set a number of sub categories were employed to note common occurrences. These include Blood Pressure checking, sick line requests, Cholesterol and Weight checks and Computer Entry. These additions aimed to account for events and topics that were likely to arise that were specific to the demographic information already held on the videoed consultations.

The additional codes added to the Davis Observation Code (DOC) were added to reflect behaviours and services that are typical to UK general practice consultations. These codes also reflected services or points of discussion that are relevant to the measurement of Self-Management Support and Anticipatory Care. The greatest of care and attention was applied

to coder consistency and accuracy which is reflected in the level of detail employed in various cycles of inter- and intra-rater reliability undertaken.

The decision to code blood pressure as a sub group of physical examination was the result of the code reflecting investigative work that was not exclusively preventative. Blood pressure checks can act to rule out a potential diagnosis as well as provide information that can inform preventative measures.

Cholesterol checks however, were considered to primarily be a preventative measure, to the GP with an answer to whether or not the patient needs further monitoring or a treatment plan to prevent other health concerns such as strokes. These codes could be used in either sub-group but the decision was made on the grounds of the distinction noted above and was used consistently thereafter in the coding process.

The additional codes and changes are outlined in Table 10.

Table 10: Operational Definitions for Davis Observation Coding and Definitions of additional codes

FI	Family Information: As outlined by Davis. Addition modification: Includes feedback and advice about family member's conditions.
EF	Evaluation Feedback: As outlined by Davis. Addition modification: Includes feedback on test results (BP etc) and physical exam.
BP	Blood Pressure: Addition code: Subcategory of PE (Physical Exam) Coded when Blood Pressure is recorded or discussed. Double coded used when carried out by Health Provider with then consultation.
Chlstrl	Cholesterol: Addition code: Subcategory of PS (Preventative Services) Coded when a cholesterol check is taken or is planned to be carried out by another member of the practice team. Double coded used when carried out by Health Provider with then consultation.
HP	Health Promotion: As outlined by Davis. Additional modification: Includes discussions on mental health. Also has doubled coded if used in association with EX, SM, NU and SU if applicable. Later to be reviewed under the heading Anticipatory Care (AC).
Wght	Weight: Addition code: Subcategory of HP (Health Promotion) Coded when th0e patient's weight is discussed either by the patient or the practitioner. Double coded used when discussed in conjunction with health promotion or nutrition/exercise etc.
PT	Planning Treatment: As outlined by Davis. Additional modification: Includes treatment plan and follow ups i.e. 'watchful waiting'. Also includes new and repeat prescriptions, filling in forms and referrals.
PR	Procedure (any): As outlined by Davis. Addition modification: Includes when bloods, and bodily fluids as taken i.e. urine, phlegm, stool samples.
DOC Line	Doctor's Line: Additional code: Any Doctor's line request, hospital's request or that issued under the instruction of the health provider.
COMP Ent	Computer Entry: Additional code: Any time where the health provider uses the computer to enter information that that interrupts conversation.

The new codes were used within the first (stage 1) and second (stage 2) and third (stage 3) cycles of learning the Davis Observation Code (DOC) and IRR was calculated to take into account these subcategories for coder 1 (JMM) and coder 2 (SM).

The first stage 1 the additional codes included; ‘Doctor Line’ and ‘Computer Entry’.

For stage 2 the additional codes were; ‘Doctor Line’, ‘Computer Entry’, ‘Weight’ a subcategory of Health Promotion and Blood Pressure a subcategory of Physical Exam.

At stage 3 the additional codes where ‘Doctor Line’, ‘Computer Entry’, ‘Weight’ a subcategory of Health Promotion, Blood Pressure a subcategory of Physical Exam (PE) and Cholesterol’ a subcategory of Preventative Services.

The resulted in a total of 5 additional subcategories (Table 11), the results of these inter-rater reliability calculations are as follows;

Table 11: IRR Data set 1 - additional subcategories

Code	Occurrences*	Davis Method	Cohen’s Kappa
Doctor Line (Doc Line)	0	NK	NK
Computer Entry (Comp Ent)	14	0.71	0.71
TOTAL	209	0.50	0.64

*Total Number of occurrences coded by at least one coder
N/K = No Kappa Available

Table 11 shows that no inter-rater reliability was recorded for subcategory Doctor Line or sick line across both IRR methods. As for Computer Entry excellent IRR was recorded across both IRR methods.

An average inter-rater reliability score of 0.50 was recorded using the Davis method and an excellent inter-rater reliability score of 0.64 was recorded according to Cohen’s Kappa.

Table 12: IRR Data set 2 - additional subcategories

Code	Occurrences*	Davis Method	Cohen's Method
Doctor Line (Doc Line)	3	0	NK
Computer Entry (Comp Ent)	14	0	NK
Weight (Wght)	0	NK	NK
Blood Pressure (BP)	8	0.75	0.84
TOTAL	272	0.48	0.62

N/K = No Kappa Available

*Total Number of occurrences coded by at one coder

Table 12 shows that no inter-rater reliability was recorded for subcategory Doctor Line or sick line, Computer Entry and Weight across both IRR methods. As for Blood Pressure an excellent IRR was recorded across both IRR methods.

Overall an average inter-rater reliability score of 0.48 was recorded using the Davis method and a good inter-rater reliability score of 0.62 was recorded according to Cohen's Kappa.

Table 13: IRR Data set 3 - additional subcategories

Code	Occurrences*	Davis Method	Cohen's Method
Doctor Line (Doc Line)	4	0.75	0.85
Computer Entry (Comp Ent)	4	0.75	0.85
Weight (Wght)	5	0.60	0.74
Blood Pressure (BP)	2	1.00	1.00
Cholesterol (Chlstrl)	1	1.00	1.00
TOTAL	209	0.75	0.85

*Total Number of occurrences coded by at least one coder

N/K = No Kappa Available

Table 13 shows that an excellent inter-rater reliability was recorded for subcategory Doctor Line or sick line, Computer Entry, Blood Pressure and Cholesterol across both IRR methods. An excellent IRR score was also recorded for Weight using Cohen's Kappa. A good IRR was recorded for Weight according to the Davis method.

Overall an excellent inter-rater reliability score of 0.75 was recorded using the Davis method and an excellent inter-rater reliability score of 0.85 was recorded according to Cohen's Kappa.

6.4 Inter-Rater Reliability; Summary

The work that was carried out with the Davis Observation Coding system between coders 1 (JMM) and 2 (SM) has provided both coders with knowledge and experience of using this coding system.

It was concluded that with the last set of inter-rater reliability achieving an excellent standard (0.70 and above across both methods) that a larger sample of Davis Observational Coding (DOC) (Callahan and Bertakis 1991). This work was carried out within June 2011.

6.5 Intra-Rater Reliability; Summary of cycles and results

As the number of videos to be coded within the related Davis FDS chapter (chapter 7) included over 400 videoed primary care consultation, intra-rater reliability calculations were made to ensure that the standard of coding did not waver throughout the process which was completed between February 2011 and June 2011.

Intra-Rater Reliability; Attempt 1

Intra-Rater Reliability was carried out to ensure that coder 1 (JMM) did not deviate from the coding method over the course of coding the full data set. Intra-Rater Reliability was calculated after the first 106 consultations had been coded using the Davis Observation Coding system (this covered coding work from GPs 1-11).

This sample of intra-rater reliability involved the first 6 consecutive consultations in numerical order that were present within the overall dataset after 106 consultations were coded. This sample of 6 consultations represented 6 female patients from the high

deprivation group. The group had an average age of 43.8 years (ranging from 39 years to 54 years).

A good intra-rater reliability score of 0.65 was recorded using the Davis method and an excellent intra-rater reliability score of 0.76 was recorded according to Cohen's Kappa.

Intra-Rater Reliability; Attempt 2

Intra-Rater Reliability was calculated again after 292 consultations had been coded using the Davis Observational Coding system (this covered coding work from GPs 1-33).

This sample of intra-rater reliability involved a further 6 consultations that were coded as part of the full data set of consultations. This sample of intra-rater reliability involved the first 6 consecutive consultations in numerical order that were present within the overall dataset after 292 consultations were coded. This sample of 6 consultations represented 6 female patients from the low deprivation group. The group had an average age of 34.8 years (ranging from 19 years to 67 years).

An excellent intra-rater reliability score of 0.94 was recorded using the Davis method and an excellent intra-rater reliability score of 0.89 was recorded according to Cohen's Kappa.

Intra-Rater Reliability; Attempt 3

Intra-Rater Reliability was calculated again after 395 consultations had been coded using the Davis Observational Coding system (this covered coding work from GPs 33-43).

This sample of intra-rater reliability involved a further 6 consultations that were coded as part of the full data set of consultations. This sample of 6 consultations represented 3 male and female patients respectively, inclusive of 3 patients from a low deprivation group and 3 patients from a high deprivation group. The group had an average age of 53.5 years (ranging from 34 years to 67 years). This split of patients also aimed to ensure that the good previous intra-rater reliability scores (attempt 1 and 2) were not due to gender.

An excellent intra-rater reliability score of 0.85 was recorded using the Davis method and an excellent intra-rater reliability score of 0.91 was recorded according to Cohen's Kappa.

Intra-Rater Reliability; Summary

The work that was carried out with the Davis Observation Coding system by coder 1 (JMM) has built on the inter-reliability work carried out between coders 1 (JMM) and coder 2 (SM). This additional quality control measure ensured that the standard of coding was not affected by changes in the coder's style between initial coding in February 2011 and the completion of the coding in June 2011.

It was concluded that the rater reliability achieved within attempts 1- 3 was of an excellent standard for both inter- and intra-rater reliability measures.

6.6 Inter-Rater Reliability in previous Davis Literature

A comparison of the Davis Observation Codes (DOC) inter-rater reliability scores achieved within the current data with three Davis journals (Bertakis and Azari 2011; Bertakis and Callahan 1992; Walter et al. 2009) was undertaken. The results showed inter-rater reliability agreement of 0.91(Eide et al. 2010), 0.71(Eide et al. 2011) and 0.82 (Zimmermann et al. 2011) were achieved on all codes when using the Davis method (Callahan and Bertakis 1991). This level of agreement is slightly higher than the author's achieved agreement rate of 84.7% but is on par with the achieved Cohen's Kappa of 0.91.

Therefore the literature shows that the current analysis undertaken on the Davis Observation Code (DOC) codes is in line with published levels of agreement.

6.7 Conclusions

The Davis Observation Coding (DOC) system codes the content of the patient-physician encounter. The data was coded and inter-rater reliability was calculated between the two coders (JMM & SM). Each of the consultations involved one or more patients and a general practitioner.

Using the Davis Coding system across all 3 data sets provided the opportunity for the coders to improve on their understanding of the coding scheme, its use within the consultations selected as well as the inter-rater and intra-rater reliability scores.

This chapter has shown that the amount and type of codes that occur within consultations are variable. It was noted that the number of occurrences of History Taking, Planning Treatment and Health Education were the most frequent across all the consultations (Data set 1-3). There were also considerable incidents of Physical Examinations in data set 1, Chatting in data set 2 and Family Information within data set 3. As for the additional codes Computer Entry was the most coded across all the consultations (Data sets 1-3). The frequency of the codes will of course be explored in detail in a later chapter (Chapter 7).

It was also concluded that with the last set of inter-rater reliability achieving an excellent standard (0.70) within both Cohen's Kappa and the Callahan et al method. This was supported by an excellent intra-rater reliability score across all the consultations (Data sets 1-3).

The Davis coding system provides scope to code consultation occurrences alongside demographic specific codes added by the coders. The fact that the Davis system can be coded in real time within the need to type transcripts makes it feasible to use on a larger data set. To the author's knowledge the Davis Observation Code (DOC) has not been used in any other UK based general practice consultation studies.

Chapter 7: Applying the Davis Observation Code (DOC) to the content of consultations in general practices serving low and high deprivation areas.

7.1 Summary

This chapter compares the content of consultations in general practices serving low and high deprivation groups, using the Davis coding system to describe observed activities in 499 videoed consultations.

The aim of this chapter is to answer objective one of the thesis, which is to objectively assess the nature, type and frequency of Self-Management Support in consultations (Self-Management Support) in high and low deprivation areas.

There was no difference in Self-Management Support overall between high and low deprivation groups. However, the amount of Anticipatory Care delivered in the consultations was twice as high in the deprived areas as in the affluent. This was due to more health promotion in the high deprivation consultations.

Two individual components of Self-Management Support, namely Treatment Effects and Compliance, were significantly higher in the affluent group when compared with the deprived.

In terms of the other individual Davis codes, the results confirm findings from previous studies using the Davis system that there were more observations of History Taking, Physical Examination, Structured Interaction, Substance Use and Smoking in the high deprivation compared with the low deprivation consultations.

The findings also suggest that within the lower deprivation groups the practitioners adopt a more collaborative approach to consulting. This type of approach sees the consultation time

being spent discussing Treatment Effects and Compliance, requesting Evaluation Feedback and planning any necessary Procedures. The results agree within findings within the literature that lower deprivation groups are associated with better educated patients who respond well to health advice that incorporates physical as well as behavioural and emotional factors. In both patient groups there was little discussion regarding Counselling, Family Information, or Nutrition and Preventative Services.

In conclusion, although there was no difference in Self-Management Support overall in the consultations between high and low deprivation groups there were significant differences in the nature, type and frequency of certain aspects of Self-Management Support, with significantly more Anticipatory Care in the high deprivation group. However, it should be noted that in both the high and low deprivation groups, time is predominately allocated to gaining information about the patient's complaint, conducting physical examinations and planning treatment.

7.2 Introduction

The Davis Observation Coding (DOC) system(Callahan and Bertakis 1991) was introduced in chapter 4. This chapter describes the Davis system in more detail.

7.3 Coding System

The Davis Observation Coding system (Callahan and Bertakis 1991) was devised in 1991 at the University of California by Callahan et al (Callahan and Bertakis 1991). An outline of the definitions of codes can be found within the recap box as outlined within Davis Observation Coding paper (Table 14).

Additional Codes

Additional codes were established for this study (Table 15). The new coding options were added by the coders (JMM & SM) while learning the coding system. The additional codes reflect the types of tasks that are typical to General Practice consultations in Scotland

Table 14: Davis Recap of codes

Davis Codes	Code	Description
Chatting	CH	Physician or patient discussing topics not related to current visit, e.g. small talk or humour which might be used to build rapport.
Structuring Interaction	SI	Physician or patient discussing what is to be accomplished in current interactions; or physicians asks patient for any questions. Excludes requests by physician for patient to do anything which is part of the physical exam or is done to prepare for physical exam. Excludes planning treatment. Can include statements describing what will be done in the physical exam.
Counselling	CO	Physician discuss interpersonal relations or current emotional state of patient or patient's family, provides reassurance, advice or support or uses self-disclosure to reassure patient. Excludes 'advice' asking for health behaviour change (see Health Promotion). Physician restates what patient has said (in regards to above) or reflects on the patient's nonverbal behaviour.
History Taking	HT	Physician inquiring about or patient describing details related to the current chief complaint or to prior illnesses or treatment. Includes physician reading medical record. Excludes patient responses to current treatment: see Treatment Effects or TE. Includes physician asking if physical exam manoeuvre produces pain or felling describes in chief complaint or history.
Family Information:	FI	Physician inquires about or discusses family medical or social history or about current functioning of family. (Family can include unrelated significant others from social or work groups.)
Treatment Effects	TE	Physician inquires about or patient describes results of on-going therapeutic intervention for current episode of problem.
Evaluation Feedback	EF	Physician tells patient about results of history, physical lab work, etc. (includes telling that lab test are incomplete, inconclusive, etc.). Results can be preliminary or speculative.
Physical Examination	PE	Physician conducts any aspect of physical examination of patient including taking samples for lab tests of diagnostic procedures; also includes asking patient to repeat for physical exam, telling patient to do something in physical example, or asking if manoeuvre hurts or is tender.
Patient Question	PQ	Patient asks question of physician about diagnosis, treatment, side effects, history, or disease.
Compliance	CM	Physician inquiring about or discussing what patient is currently doing or has done recently regarding previously requested behaviour taking medication, changing nutrition, or doing exercise or other behaviour change.
Preventative Services	PS	Physician discusses plans or performs any screening task associated with disease prevention or takes history on disease prevention. For example: Pap smear, breast exam, vaccination, hip click exam, testicular exam, rectal exam, thyroid exam, or scoliosis exam. (See Preventative Services sheet.)
Health Education	HE	Physician presents information regarding health to patient. This may include information regarding diagnosis, aetiology, drug effects and treatment, or accident prevention. May also include statements about health attitudes and motivation.
Health Knowledge	HK	Physician asks patient spontaneously offers what the patient knows or believes about their health or disease (opposed to patient's own treatment history which is coded as History Taking).
Health Promotion	HP	Physician asks for a change in patient's behaviour in order to increase or promote patient's health (including accident prevention). This excludes changing behaviour around taking medication. Any explanation of the procedure itself, its side effects, drug interactions, or contraindications should be coded HE. Excludes asking patient to take medication.
Planning Treatment	PT	Physician prescribes a medication, diagnosis or treatment plan to be followed other than behaviour change (see Health Promotion). Includes physician asking is prescription refill is needed.
Exercise	EX	Any question about or discussion of exercise.
Smoking Behaviour	SM	Any question about or discussion of smoking or other use of tobacco.
Nutrition	NU	Any question about or discussion of nutrition. Includes discussion of diet and/or food intake (excludes questions regarding only appetite, which is coded as history).
Substance Use	SU	Any questions about or discussion of drinking alcohol or use of other substance.
Procedure	PR	Any treatment or diagnosis procedure done in office, e.g. removing skin tags, warts, drawing blood, casting, dressing, debriding etc. Excludes preventative services such as Pap smear

Table 15: Additional and modified codes

Additional/modified Codes	Code	Description
Family Information	FI	As outlined by Davis. Additional modification; includes feedback and advice on family members' conditions
Evaluation Feedback	EF	As outlined by Davis. Additional modification; includes feedback on test results (BP etc) and physical exam
Blood Pressure	BP	Additional subcategory of PE (Physical Examination) Coded when Blood Pressure is recorded or discussed. Double coded when carried out by Health Provider.
Cholesterol	Chlstrl	Additional subcategory of PS (Preventative Services) Coded when a cholesterol check is taken or planned to be carried out by another member of the practice team. Double coded when carried out by the Health provider in the consultation.
Health Promotion	HP	As outlined by Davis. Additional modification: includes discussion on mental health. Double coded if used in association with EX, SM, NU and SU if applicable.
Weight	Wght	Additional code: of Health Promotion (HP). Coded when the topic of weight is discussed by patient or practitioner. Double coded is discussion in connection with health promotion or nutrition/ exercise etc.
Planning Treatment	PT	As outlined by Davis. Additional modification: includes treatment plan and follow ups i.e. 'watchful waiting'. Also includes new and repeat prescriptions, filling in forms and referrals.
Procedure	PR	As outlined by Davis. Additional modification: includes when bloods, and bodily fluids are taken i.e. urine, phlegm, stool samples.
Doctor's Line	DOC Line	Additional code: Any Doctor's line request, hospital's request or that issued under the instruction of the health provider.
Computer Entry	Comp ENT	Additional code: Coded when the health provider uses the computer to enter information that interrupts conversation.

Sampling Methods

The characteristics of the practices, GPs, patients and non-responders are presented in chapter 4. 47 GPs were selected, including 22 from practices serving low deprivation groups and 25 from practices serving high deprivation groups who took part in the previous study (Mercer et al. 2009).

Coding procedures

The coding procedure involved the coding of the full videoed consultation i.e. from when the patient entered the room to the patient's departure, with codes being recorded at 30 second intervals. The 499 consultations varied in length in both the high and low deprivation groups. This process was undertaken between August and October 2010. Coding was done in real time (i.e. the consultations were coded as the coder viewed the video).

Self-Management Support and Anticipatory Care

Self-Management Support is considered to be a combination of a group of seven codes deemed by the coders (JMM & SM) as being related to Self-Management Support within the consultation setting. These codes were; Treatment Effects, Health Knowledge, Patient Question, Compliance, Health Education, Health Promotion and Preventative Services. The rationale for this decision and how this relates to the empathy effects model and the research objectives is given below.

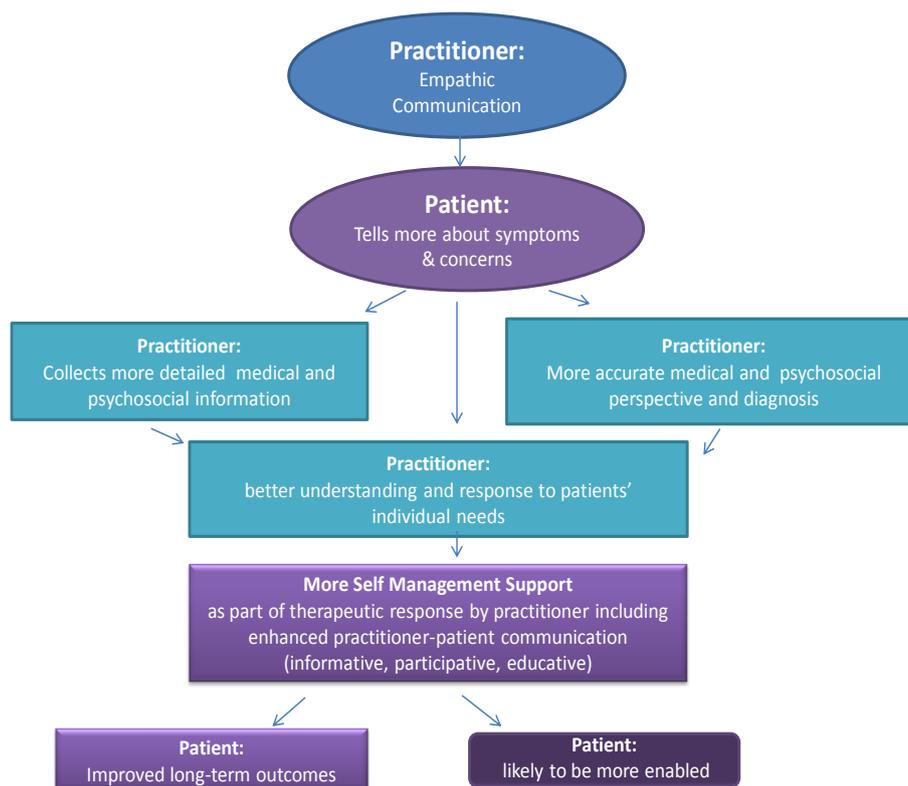


Figure 19: Effect model of empathic communication and Self Management Support (revisited) (Neumann et al, 2009)

In the effect model of empathy and Self-Management Support , The Davis codes can be seen as relating to Self-Management Support in the following ways.

1. Treatment Effects relates to the practitioner collecting more detailed information about the results of any on-going therapeutic intervention (which could include self-management activities).
2. Health Knowledge relates to if the GP asks or patients spontaneously offers what patient knows or believes about health or disease, which would give the practitioner a better understanding of the patients individual needs.
3. Patient Questions: Patient asks question of physician about diagnosis, treatment, side effects, history, or disease. This could enhance communication (informative, participative, and educative).
4. Compliance: Physician inquiring about or discussing what patient is currently doing or has done recently regarding previously requested behaviour taking medication, changing nutrition, or doing exercise or other behaviour change. This clearly relates directly to Self-Management Support in the above model.

5. Health Education: Physician presents information regarding health to patient. This may include information regarding diagnosis, aetiology, drug effects and treatment, or accident prevention. This includes changing behaviour around taking medication. Includes any explanation of the procedure itself, its side effects, drug interactions, or contraindications. May also include statements about health attitudes and motivation. Again this may clearly relate directly to Self-Management Support.

6. Health Promotion: Physician asks for a change in patient's behaviour in order to increase or promote patient's health (including accident prevention). Includes mental health, smoking, alcohol or drug misuse, diet, exercise, weight management. Again, directly related to Self-Management Support

7. Preventative services: Physician discusses plans or performs any screening task associated with disease prevention or takes history on disease prevention. This includes cholesterol tests. Again clearly related to Self-Management Support.

Anticipatory Care is considered to include (a sub-code of Self-Management Support) 2 codes; Preventative Services and Health Promotion.

7.4 Results

Prevalence of observed activities within consultations

The Davis codes were reviewed to measure the percentage of consultations in which each of the codes were observed.

Table 16: The percentages of consultations containing each Davis code

Davis Code	All	Low Deprivation	High Deprivation
Chatting (CH)	225 (45.1%)	102 (43.6%)	123 (46.4%)
Structured Interaction (SI)	47 (9.4%)	13 (5.6%)	34 (12.8%)
Counselling (CO)	54 (10.8%)	29 (12.4%)	25 (9.4%)
History Taking (HT)	496 (99.4%)	233 (99.6%)	263 (99.2%)
Family Information (FI)	232 (46.5%)	109 (46.6%)	123 (46.4%)
Treatment Effects (TE)	243 (48.7%)	127 (54.3%)	116 (43.8%)
Health Knowledge (HK)	228 (45.7%)	108 (46.2%)	120 (45.3%)
Evaluation Feedback (EF)	368 (73.7%)	183 (78.2%)	185 (69.8%)
Physical Examination (PE)	347 (69.6%)	156 (66.7%)	191 (72.1%)
Patient Question (PQ)	338 (67.7%)	158 (67.5%)	180 (67.9%)
Compliance (CM)	230 (46.1%)	116 (49.6%)	114 (43.0%)
Preventative Services (PS)	6 (1.2%)	3 (1.3%)	3 (1.1%)
Health Education (HE)	43 (87.2%)	205 (87.6%)	230 (86.8%)
Health Promotion (HP)	112 (22.4%)	32 (13.7%)	80 (30.2%)
Planning Treatment (PT)	477 (95.6%)	223 (95.3%)	254 (95.8%)
Exercise (EX)	82 (16.4%)	33 (14.1%)	49 (18.5%)
Smoking (SM)	103 (20.6%)	34 (14.5%)	69 (26.0%)
Nutrition (NU)	127 (25.5%)	53 (22.6%)	74 (27.9%)
Substance Use (SU)	69 (13.8%)	17 (7.3%)	52 (19.6%)
Procedure (PR)	53 (10.6%)	35 (15.0%)	18 (6.8%)
Additional codes:			
Blood Pressure (BP)	124 (24.8%)	55 (23.5%)	69 (26.0%)
Cholesterol (Chlstrl)	28 (5.6%)	12 (5.1%)	16 (6.0%)
Weight (Wght)	102 (20.4%)	37 (15.8%)	65 (24.5%)
Fit Note/Sick Line (DOC Line)	61 (12.2%)	32 (13.7%)	29 (10.9%)
Computer Entry (COMP Ent)	188 (37.7%)	67 (28.6%)	121 (45.7%)

Table 16 shows that History Taking and Planning Treatment were observed in over 95% of the consultations, while Physical Examinations and Patient Question were observed in over 65%. Structured Interaction (12.8% vs. 5.6%), Health Promotion (30.2% vs. 13.7%), Smoking (26.0% vs. 14.5%) and Substance Use (19.6% vs. 7.3%) were observed more than twice as often within the high deprivation compared with the low deprivation group. Procedures (6.8% vs. 15.0%) were observed twice as often in the low deprivation compared with the high deprivation group. There were also considerably more discussions on Weight (24.5% vs. 15.8%) and instances of computer use (45.7% vs. 28.6%) within the high

deprivation group. Observations of Preventative Services (1.3 % vs. 1.1%) were rare in both the high and low deprivation groups.

These findings suggest that the high deprivation consultations focus on preventative measures as measured by the QOF system such as screening patients to identify risky health behaviours like smoking and alcohol consumption and the beliefs the patient hold about their own health. In comparison, the low deprivation group discussed or undertook more procedures such as taking blood, and measuring blood pressure. This difference in the number of procedures being undertaken may be the result of less multiple morbidity being recorded in the low deprivation group, therefore GPs are responding to new or individual health complaints that would benefit from the use of diagnostic procedures to determine a treatment plan.

7.4.1.1 Prevalence of observed health promotion activities within consultations

Table 17 shows the Health Promotion codes: Smoking, Exercise, Nutrition and Substance Use. There are higher instances of these codes in the high deprivation group for Health Promotion, Smoking and Substance Use while Nutrition was observed more often in the low deprivation group. The differences for each of the findings are small.

Table 17: Comparison of high and low deprivation groups for Health Promotion codes (percentages in brackets).

Davis Code	All	Low Deprivation	High Deprivation
Health Promotion only (not coded with - SM , EX, NU, SU)	15 (3.0%)	6 (2.6%)	9 (3.4%)
Smoking (SM) with no HP	56 (11.2%)	23 (9.8%)	33 (12.5%)
Exercise (EX) with no HP	42 (8.4%)	18 (7.7%)	24 (9.1%)
Nutrition (NU) with no HP	71 (14.3%)	37 (15.8%)	34 (12.8%)
Substance Use (SU) with no HP	34 (6.7%)	12 (5.1%)	22 (8.3%)

Observations of Individual Davis Codes within consultations

Table 18 compares the mean number (average) of codes that were coded in the high and low deprivation groups. The codes that had statistically significantly differences in the low compared with the high deprivation group are seen in bold.

Table 18: Comparison of means (SD) number of codes per consultation between the high and low deprivation groups

	Low Deprivation N (234)	High Deprivation N (265)	p-values
Chatting (CH)	1.3 (2.1)	1.3 (2.2)	0.64
Structured Interaction (SI)	0.1 (0.7)	0.2 (0.9)	<0.01
Counselling (CO)	0.4 (1.7)	0.2 (0.8)	0.28
History Taking (HT)	11.3 (6.4)	12.5 (6.6)	<0.03
Family Information (FI)	1.5 (2.6)	1.6 (3.1)	0.82
Treatment Effects (TE)	1.3 (1.7)	1.1 (1.8)	<0.05
Health Knowledge (HK)	0.8 (1.2)	1.1 (1.7)	0.42
Evaluation Feedback (EF)	2.1 (1.9)	1.7 (1.8)	<0.01
Physical Examination (PE)	2.3 (2.3)	3.0 (2.7)	<0.01
Patient Question (PQ)	1.5 (1.6)	1.5 (1.8)	0.59
Compliance (CM)	1.2 (1.7)	0.8 (1.3)	<0.02
Preventative Services (PS)	0.0 (0.2)	0.0 (0.3)	0.89
Health Education (HE)	3.7 (3.0)	3.6 (2.9)	0.62
Health Promotion (HP)	0.3 (1.2)	0.8 (1.5)	<0.00
Planning Treatment (PT)	6.4 (3.7)	6.2 (4.2)	0.36
Exercise (EX)	0.4 (1.3)	0.4 (0.9)	0.19
Smoking (SM)	0.2 (0.7)	0.7 (1.6)	<0.01
Nutrition (NU)	0.4 (0.9)	0.6 (0.6)	0.15
Substance Use (SU)	0.2 (1.0)	0.5 (1.4)	<0.00
Procedure (PR)	0.5 (1.2)	0.2 (0.9)	<0.00

There were no significant difference between the high and low deprivation groups between the following codes; Chatting, Counselling, Family Information, Health Knowledge, Patient Question, Preventative Services, Health Education, Planning Treatment, Exercise, or Nutrition (Table 18).

Table 18 shows significantly higher levels of History Taking (12.5 vs. 11.3), as well as Physical Examinations (3.0 vs. 2.3) within consultations in the high compared with the low deprivation groups (also shown in Figure 20).

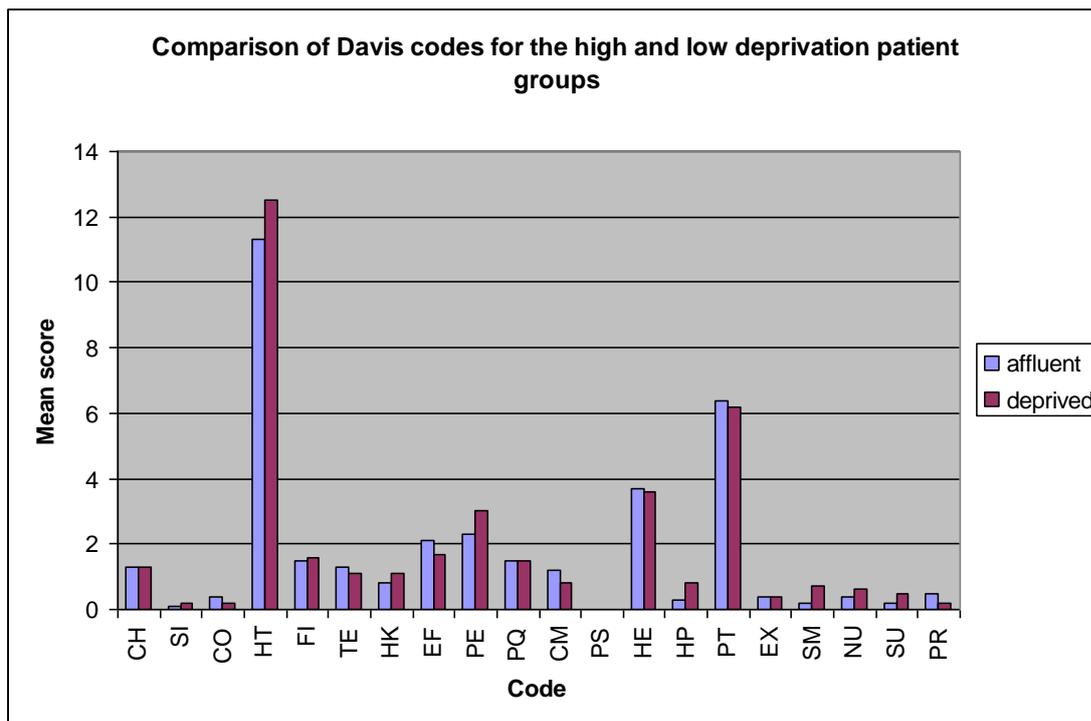


Figure 20: Comparison of Davis codes for the high and low deprivation patient groups

There were also significant differences found between the low and high deprivation groups with respect to Treatment Effects (1.3 vs. 1.1), Evaluation Feedback (2.1 vs. 1.7) and Compliance (1.2 vs. 0.5) being observed in the low deprivation patient group (Table 19). Structured Interaction (0.1 vs. 0.2), discussions on Health Promotion (0.3 vs. 0.8), and management of Smoking (0.2 vs. 0.7), and Substance Use (0.2 vs. 0.5) were more common in the deprived group (Table 18). These differences were small.

There were significantly more Procedures Doctor’s Lines being observed in the low deprivation group compared with the high deprivation group (Figure 21).

Table 19: Comparison of the mean (SD) number of additional codes between the high and low deprivation groups

Additional Codes	Low Deprivation (n 234)	High Deprivation (n 265)	p-value
Blood Pressure (BP)	0.7 (1.4)	0.8 (1.6)	0.36
Cholesterol (Chlstrl)	0.1 (0.8)	0.2 (0.8)	0.67
Weight (Wght)	0.4 (1.4)	0.5 (1.1)	<0.03
Fit Note/Sick Line (DOC Line)	0.5 (1.4)	0.3 (1.1)	0.33
Computer Entry (COMP Ent)	0.6 (1.5)	1.3 (1.9)	<0.00

Computer Entry (1.3 vs. 0.6) was observed significantly more often within the high compared with the low deprivation group. There were no significant differences between the observations of Blood Pressure (0.7 vs. 0.8) or Cholesterol checks (0.1 vs. 0.2), and Doctor’s Lines (0.5 vs. 0.3) (Table 19). However, significant differences between the high and low deprivation groups were found for Weight (0.4 vs. 0.5) with more observations being found within the high deprivation group (also seen in Figure 21).

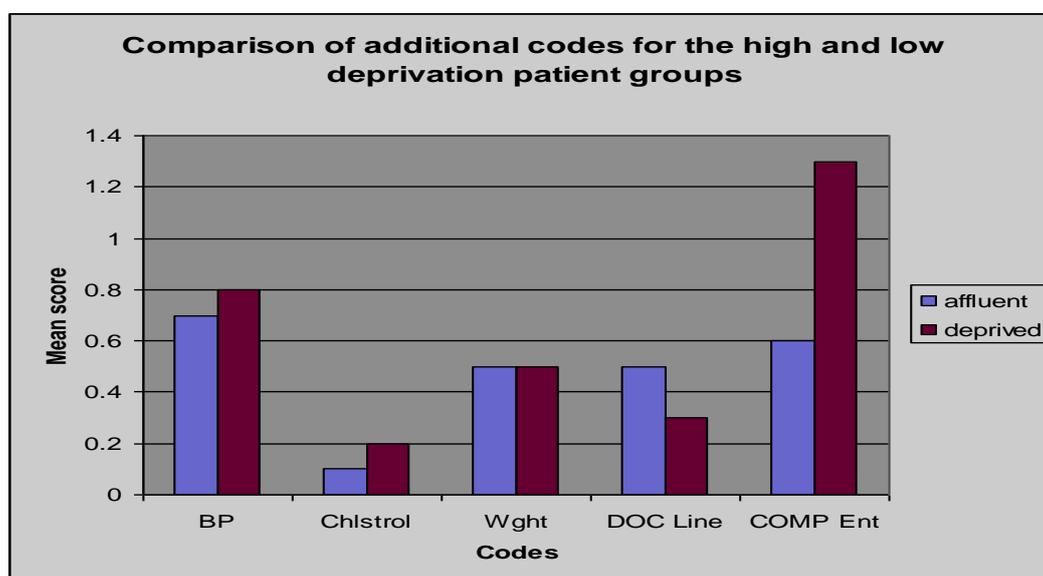


Figure 21: Comparison of additional codes for the high and low deprivation patient groups

7.4.1.2 Analysis of Confounders

Logistic regression analysis was run on lists of potential confounding variables to test that the results were not the result of chance or multiple testing. The list of confounding variables were selected on the basis that these variables had produced significant results in the earlier analysis. The regression analysis was measured using SPSS v18.0 and the lists of variables can be found in detail in Appendix G.

The significant differences found for Structured Interaction, History Taking, Treatment Effects, Evaluation Feedback , Physical Examination, Compliance, Health Promotion, Smoking, Substance Use and Procedure (Table 18) between the high and low deprivation groups were analysed by logistic regression controlling for the key potential confounders.

This analysis showed that the differences in History Taking, Physical Examination, Smoking, and Computer Entry remained statistically significant when the confounders were taken into account within 3 (models 2-2c) out of the 4 levels of analysis.

Compliance, Health Promotion and Procedure remained statistically significant when the confounders' age; gender, multiple morbidity (MM), PHQ-9 and anxiety were taken into account. However, Procedure was no longer statistically significant when the patient's rating of their health in past year was taken into account. Substance Use was no longer statistically significant when confounder's in models 2-2c was taken into account. These findings are seen in detail in Appendix G and Table 20.

Table 20: Analysis of confounders considered Davis codes in high and low deprivation groups

Variable	Adjusted ¹	Adjusted ²	Adjusted ^{2b}	Adjusted ^{2c}
	Beta (p-value)	Beta (p-value)	Beta (p-value)	Beta (p-value)
Chatting (CH)	0.04 (0.93)	-0.03 (0.62)	-0.004 (0.93)	-0.004 (0.94)
Structured Interaction (SI)	0.18 (0.18)	0.32 (0.12)	0.34 (0.12)	0.28 (0.22)
Counselling (CO)	-0.13 (0.14)	-0.16 (0.12)	-0.18 (0.07)	-0.25 (<0.03)
History Taking (HT)	0.27 (<0.05)	0.10 (0.51)	0.01 (0.50)	0.01 (0.45)
Family Information (FI)	0.14 (0.66)	-0.01 (0.88)	-0.002 (0.95)	-0.004 (0.91)
Treatment Effects (TE)	-0.06 (<0.05)	-0.07 (0.19)	-0.07 (0.21)	-0.06 (0.34)
Health Knowledge (HK)	0.13 (<0.04)	0.13 (0.06)	0.12 (0.09)	0.14 (0.90)
Evaluation Feedback (EF)	-0.13 (0.10)	-0.11 (<0.05)	-0.13 (<0.03)	-1.22 (<0.05)
Physical Examination (PE)	0.11 (<0.00)	0.21 (<0.001)	0.12 (<0.004)	0.15 (<0.001)
Patient Question (PQ)	-0.16 (0.77)	0.00 (1.00)	-0.009 (0.88)	-0.04 (0.52)
Compliance (CM)	-0.19 (<0.03)	-0.17 (<0.01)	-0.17 (<0.01)	-0.16 (<0.03)
Preventative Services (PS)	0.13 (0.73)	0.38 (0.37)	0.42 (0.36)	0.25 (0.57)
Health Education (HE)	-0.19 (0.55)	-0.01 (0.66)	-0.02 (0.62)	-0.04 (0.33)
Health Promotion (HP)	0.26 (<0.02)	0.23 (<0.01)	0.24 (<0.01)	0.20 (<0.03)
Planning Treatment (PT)	-0.17 (0.46)	-0.02 (0.34)	-0.03 (0.27)	-0.01 (0.58)
Exercise (EX)	0.06 (0.51)	0.09 (0.38)	0.09 (0.37)	0.03 (0.77)
Smoking (SM)	0.41 (<0.00)	0.41 (<0.001)	0.44 (<0.00)	0.56 (<0.00)
Nutrition (NU)	0.14 (0.08)	0.14 (0.09)	0.16 (0.06)	0.19 (<0.05)
Substance Use (SU)	0.22 (<0.03)	0.14 (0.14)	0.16 (0.11)	0.12 (0.21)
Procedure (PR)	-0.22 (<0.02)	-0.19 (<0.05)	-0.19 (<0.05)	-0.11 (0.27)
Additional Codes:				
Blood Pressure (BP)	0.08 (0.22)	0.12 (0.07)	0.12 (0.09)	0.13 (0.07)
Cholesterol (Chlstrl)	0.05 (0.69)	0.05 (0.72)	0.06 (0.60)	0.008 (0.95)
Weight (Wght)	0.03 (0.70)	0.004 (0.96)	0.003 (0.97)	-0.05 (0.55)
Fit Note/Sick Line (DOC Line)	-0.10 (0.20)	-0.17 (0.06)	-0.18 (<0.05)	-0.18 (0.08)
Computer Entry (COMP Ent)	0.24 (<0.00)	0.24 (<0.001)	0.23 (<0.001)	0.20 (<0.01)

Standardized Coefficients Beta, p values

Adjustments estimates using linear regression with robust standard errors and:

¹ Adjustment for baseline MYMOP (well-being), age and gender

² Adjustment for baseline MYMOP (well-being), age, gender, multiple morbidity (MM), PHQ-9 and Anxiety

^{2b} Adjustment for baseline MYMOP (well-being), age, gender, rating of health in part year (12 months), PHQ-9 and Anxiety

^{2c} Adjustment for baseline MYMOP (well-being), age, gender, rating of health in part year (12 months), duration of symptoms, PHQ-9 and Anxiety

Observations of Self-Management Support & Anticipatory Care within consultations

Table 21 shows that there were no significant differences between the levels of Self-Management Support observed in high and low deprivation groups.

Table 21: Comparison of the mean (SD) high and low deprivation groups Self-Management Support & Anticipatory Care codes

Combined Codes	Low Deprivation (n 233)	High Deprivation (n 265)	p-value
Self-Management Support (Self-Management Support)	8.9 (6.3)	8.9 (5.8)	0.82
Anticipatory Care (AC)	0.4 (1.2)	0.8 (1.6)	<0.00

There was a significant difference for Anticipatory Care observed between the high and low deprivation groups, with more Anticipatory Care related codes being discussed in the high compared with the low deprivation groups (Table 21).

7.5 Referral Data

As the decision to code referrals was made after the start of the study, only 459 could be coded in this way. The study population remains the same as detailed within the main body of this chapter. From the original 499 consultations, 40 consultations did not have referral data collected for them as the decision to record information regarding the discussion of patient referrals was made after the Davis coding had already begun. This resulted in 207 low deprivation and 252 high deprivation patients being included within this data set.

7.5.1.1 Comparison of referral data by deprivation

The data were analysed to measure how often instances of ‘new referrals’ were observed.

Table 22: Number of referrals observed in each category between the high and low deprivation groups

Category	Low Deprivation (%)	High Deprivation (%)	Total (%)
New Referrals	93 (43.7)	119 (56.1)	212
More than one referrals	68	86	154 (72.6)
New referrals that are agreed on	71 (76.3)	91 (76.5)	162 (76.4)
Type of Referral			
NHS referrals	91 (38.8)	116 (43.4)	82.2%
Non NHS referrals	2 (4.9)	3 (12.7)	17.6%

Table 22 shows that 212 new referrals were observed (93 and 119 in the low and high deprivation groups respectively). In 72.6% of consultations, more than one referral was agreed on. 76.4% of new referrals were agreed on overall (76.3% and 76.5% from the low and high deprivation groups, respectively).

82.2% of the referrals were to other NHS services. The breakdown of NHS referrals showed that the majority were to the practice nurse (34.1%), physiotherapy (27.5%), for other investigations (20.8%) and visits to specialists (17.6%).

17.6% of referrals were to outside the NHS. The majority of these were to physiotherapy (40%), chiropody (20%), and counselling (20%).

7.6 Discussion

This chapter presents a descriptive use of the Davis Observation Coding (DOC)(Callahan and Bertakis 1991) system within videoed primary care consultations as described in Context Chapter (chapter 4).

The work assesses the nature and type and frequency of Self-Management Support (including Anticipatory Care) occurring in high and low deprivation groups within general practice consultations. Two combined variables were created to measure Self-Management Support and Anticipatory Care.

The results showed that although there was no difference in Self-Management Support overall in the consultations between high and low deprivation groups there were significant differences in the nature, type and frequency of certain aspects of Self-Management Support, with significantly more Anticipatory Care in the high deprivation group. However, it should be noted that in both the high and low deprivation groups, time is predominately allocated to gaining information about the patient's complaint, conducting physical examinations and planning treatment.

7.6.1 Davis in the current study

The current analysis of the Davis Observation Code shows that the frequency and type of codes observed in the high deprivation group varied compared to the low deprivation group. This may be due to a number of factors such as different styles of consulting preferred by different practitioners (Bertakis and Azari 2011; Mead et al. 2002) or varied demands of complex complaints (Mercer et al. 2007) that are being assessed within the consultation.

The observations that were most common within the consultations included Physical Examinations and Patient Questions. It was more common to record observations regarding the discussion of Substance Use, Smoking behaviours and Weight discussions within the high deprivation compared with the low deprivation consultations.

Consultations in the high deprivation group tended to spend a high proportion of the consultation in History Taking, Structured Interaction, Physical Exam, Health Promotion, Smoking and Substance Use. The finding that more time was spent on History Taking, Substance Use, Smoking and Structured Interaction is consistent within the literature (Oliver et al. 2001; Fiscella et al. 2002) that suggests lower socio-economic groups, as well as certain cultural or racial groups have unhealthy lifestyle behaviours and poor compliance with medical advice; therefore these are topics that physicians focus on. Previous research has also shown that physician behaviour during the clinical consultation on topics of diagnosis and treatment is affected by the patient's socio-economic status (Oliver et al. 2001; Bertakis et al. 1991), with practitioners within low socio-economic patient consultations adopting a more directive approach (Fiscella et al. 2002).

The differences in Treatment Effects, Evaluation Feedback and Compliance which were higher in the low deprivation compared with the high deprivation group were small. Overall the number of observed Procedures was low in both the high and low deprivation consultations. The statistical differences that were observed are possibly the result of false positive findings due to multiple testing. However the significantly higher observations of Computer Entry in the high deprivation compared with the low deprivation consultations were striking and were remained statistically significant when the 4 models of confounding variables were taken into account.

Although differences may partly reflect educational differences whereby the patient seeks more information or clarification on health related topics, other studies have suggested that patient empowerment is an important factor (Fiscella et al. 2002). The literature on empowerment suggests that less empowered patients feel they can contribute less to discussions on health and therefore are less likely to feel their expectations are being met within the consultation (Fiscella et al. 2002; Deber and Kraetschmer 1996).

The low deprivation patient group spent a high proportion of the consultation time discussing Treatment Effects requesting Evaluation Feedback, discussing the patient's level of Compliance to treatment plans (Planning Treatment) and medications as well as carrying out or planning Procedure(s). Patients from low deprivation areas spent more of the consultation in active discussion about their own care, the effects the treatment plan was having on their condition and the medication and investigations they had received. These findings (Fiscella et al. 2002) suggested that better educated higher socio-economic groups participate more actively with their doctor within the consultation setting, and are associated with better health (Fiscella et al. 2002; Fiscella 1999).

In the high and low deprivation groups there were low counts of coding for Counselling, Family Information, Nutrition and Preventative Services. These findings are supported by the work of Bertakis and Callahan (Bertakis and Callahan 1992) who found lower amounts of discussion on topics such as Family Issues and Counselling within established consultations compared with new consultations. The videoed data set consists of a mixture of new and established consultations. However, the majority of the videos analysed were established consultations and this may account for less time being spent on codes and topics that the

patient and practitioner would already have information on. Bertakis and Callahan (Bertakis and Callahan 1992) go on to say that the types of codes within the consultations are highly dependent on patient-practitioner familiarity as a consultation that includes knowledge of the patient's family or offers counselling requires the patient and practitioner to have a higher level of rapport built on knowledge of the patient's personal circumstances as well as their medical history. This type of knowledge would be built up by the GP over a number of consultations or when the patient felt comfortable to disclose it.

In terms of Self-Management Support (including Anticipatory Care) a significant difference was observed for Anticipatory Care that showed that codes relating to Anticipatory Care were discussed more often in low deprivation compared with the high deprivation groups. There were no significant differences recorded for the amount of Self-Management Support discussed between the high and low deprivation group. These findings show that the amount of discussion on both Self-Management Support and Anticipatory Care was relatively low. However, the significant finding for Anticipatory Care suggests that some health promotional tasks and preventative services were being offered within the consultations in the less deprived areas.

7.6.2 Additional Codes in the current study

The additional code for Weight was the most observed code in both the high and low deprivation groups. Computer Entry was also coded significantly more in the high compared with the low deprivation group. The additional code Weight was coded as a subgroup of Health Promotion (Table 16). The significant finding in both the high and low deprivation groups suggests that Weight management is a topic relevant to the patient health regardless of the patient's deprivation status.

As for Computer Entry this code was seen as an administrative or information sourcing task that was coded if its use stopped or interrupted the conversation between patient and practitioner. The use of computers within consultations is discussed within the literature by Walter et al (Walter et al. 2009) who found that clerical or administrative duties accounted for at least one minute of every consultation. Walters et al's (Walter et al. 2009) study reported that GPs regarded clerical duties as a time pressure within the consultation.

Interestingly, although not significant, there was a trend towards more Doctor's Line or sick lines within the low deprivation group. This is possibly the result of the high deprivation group reporting more long term illness.

The present analysis indicates that different types and frequencies of codes are associated with the patient's socio-economic status. Certain types of codes are also affected by additional factors such as how well the patient report knowing their doctor and the type of consultation. For example some of the cues patients elicited referred to topics or health concerns the patient had discussed with the doctor previous and that the doctor understood without the patient going into detail. Also, the frequency of cues increased in consultations that involved emotional concerns such as stress, depression and anxiety.

The results show that patients from high deprivation groups tend to experience a more direct biomedical focused consultation that features practical tasks such as physical exams and discussion of Substance Use. As for the low deprivation group a more bio psychosocial approach is taken with more time being spent on discussing Treatment Effects, Compliance and arranging or carrying out diagnosis treatments or discussing how previous interventions have impacted on the patient's health. For both patient groups less time is allocated for family and Counselling discussions, Patient Questions or Health Knowledge discussions.

7.6.3 Referral Data

The coded new referrals showed that the majority of referrals were to NHS services. Very few referrals were made to non NHS services such as community projects or charitable organisations therefore showing very little evidence of social prescribing. Referrals tended to be to specialist NHS care such as physiotherapy, chiropody, and counselling.

7.6.3.1 Social Prescribing

Social prescribing describes the way doctors refer patients to care outwith the consultation. It involves doctors reacting to the wider picture of needs their patients present with. In recent years Self-Management Support and Self-Care in general practice has been discussed alongside the role of external agencies; to address access to care issues. The process of signposting patients to non-health service resources has been labelled 'social

prescribing' (Watt 2011). This would see doctors taking account of their patients daily lives and concerns to inform good quality medical care that included signposting to community resources (Cawston 2011). In the thesis the number of new referrals that were discussed and agreed on by both the patients and the doctor were recorded. The results showed that the majority of the referrals were to NHS services such as the chiropody, counselling and physiotherapy. There were very few referrals recorded to non-NHS facilities and these tended to occur more often in the low deprivation group.

The low number of non-NHS referrals may have been the result of the consultation mix, as some of the consultations were for established conditions and therefore on-going referrals and treatment plans were not considered in the data. Another reason for low levels of social prescribing may be the concern that patient becomes more dependent on their GP to signpost and advocate health resources, rather than encouraging the patient through support to tackle their own problems.

A further concern is the time and resources required to establish knowledge and links to appropriate community based resources for patients. Cawston's paper (Cawston 2011) points out that GPs need a well maintained, locally relevant and user friendly directory of community resources that is up to date and accessible to the practice team. Also GPs and practice team members would benefit from more consultation time so to respond to the patients' needs and clearly explain the support available. Furthermore an extension of the practice team such as a practice attached social worker would benefit from more consultation time to response to the patients needs and clearly explain the support available. Furthermore an extension of the practice team such as a practice attached social worker would benefit the patient and practice to maintain and co-ordinate support while using the community based resource. These resources outside of the health care service can assist patients with issues such as domestic violence, financial and housing problems. Social Prescribing provides a framework for the development of alternative responses to psychosocial needs and takes account of the social and cultural factors that influence health (Brown et al. 2004).

In relate to the current thesis results, mental health and related psychosocial needs were most prevalent within the high deprivation groups within the current thesis. This presents an additional challenge to GPs in the role of advocacy in helping the patient to make the best use of the health services available. The GP must plan, integrate and evaluate the patient and

appropriate service opportunity to ensure that the social prescription being made is appropriate and beneficial to the patient. This strategy emphasizes a holistic approach, in which the patient accepts the treatment and therapies as a small part of a bigger strategy to promote their recovery or the maintenance of an achievable quality of life (The Mental Health Foundation 1997).

7.7 Davis use in previous studies

The Davis Observation Coding (DOC) system (Callahan and Bertakis 1991) has featured in three previous studies of consultations.

Bertakis and Azari (Bertakis and Azari 2011) compared 509 new adult patients attending outpatient appointments at the University of California's medical centre, USA. Patients consulted with either family doctors (n = 26) or general medical (n = 79) student interns. The aim of the study was to determine which variables of the consultation patient centred care were associated with. A patient centred approach to consulting was associated with patients from a higher socio-economic background. Family practice interns were more likely than the general medical interns to adopt a patient centred style and to discuss issues within the consultation that take account of the patient's cultural, social, psychological and biological components. Patient and practitioner gender did not have a significant effect on the results. Reducing patient anxiety and increasing the patient's involvement within the consultation were associated with a reduced demand for further investigations and referrals.

Bertakis et al (Bertakis and Callahan 1992) compared 62 new and 58 continuing patient consultations undertaken at a university based family practice centre in the USA. Continuing patient encounters were shorter and involved more Chatting, Counselling, discussion on Treatment Effects, Compliance and requests for specific patient behaviour changes regarding Health Promotion. Continuing encounters involved less structured interaction and History Taking, as well as less discussion regarding Family Information, Smoking and Substance Use.

Walker et al (Walter et al. 2009) studied 523 videoed consultations that were coded at 15 second intervals to describe GP activity. A modified version of the Davis coding system grouped the codes into 7 subgroups: Introductions, History, Management, Health Promotion, Clerical, Other and Teaching. 133 consultations involved the GP and the student being present with the patient. A further 133 consultations involved the student consulting with the patient initially and the GP joining them at a later stage. 257 consultations involved the GP consulting the patient alone. When the GP consulted alone, less time was spent on physical examinations, patient management, and clerical tasks. This resulted in more time discussing History Taking. When a student was present with the GP in the consultation more time was spent on History Taking and Teaching. This study was also conducted in USA.

To the author's knowledge, there have been no previous studies using the Davis Observation Code (Callahan and Bertakis 1991) to compare patient groups from high and low deprivation groups in a general practice setting.

7.8 Strengths and Weaknesses

The strength of this work is that it included practices and patients in groups of high and low socio-economic deprivation. The analysis adds to the body of literature involving the Davis Observation Coding (DOC) system(Callahan and Bertakis 1991). Other studies which have used the DOC system were based in primary care (Bertakis and Azari 2005) and outpatient (Bertakis and Callahan 1992) consultation settings and as a teaching aid for medical students (Walter et al. 2009).

The size of the consultation dataset ($n = 499$), is considerable and in line with previous studies using the Davis Observation Code (Bertakis and Azari 2011; Walter et al. 2009). Excellent inter-rater reliability scores were achieved (Cohen's Kappa of 0.76) for all codes, including the additional codes added by the coders (JMM and SM).

A further strength of the Davis Observation Code (DOC) is that it allows coding to be carried out in real-time while viewing the consultation video. This feature makes it a useful measurement tool for larger datasets.

The approach used within the current study involved a coding sheet designed by one of the coders (JMM) that allowed for each 30 second segment of consultation to be coded. This method allowed for easy and accurate comparisons of the codes each coder was using alongside the time frame and the behaviour coded within the consultation video. This information was especially useful when the coders were learning and improving on inter-rater reliability discrepancies.

One of the weaknesses of the thesis is the use of multiple testing which can produce false positive significant findings. A further weaknesses of the thesis is the lack of multilevel modelling that could of be used to account for clustering affects in the data. Clustering affects in data usually has the effect of widening confidence intervals and therefore decreasing the significant of some of the relationships. The use of multiple testing and multi-level modelling are explained in more detail in the discussion chapter (Chapter 12).

Another weakness of the thesis is that the videoed consultations are cross-sectional; they provide a one-off snapshot of the consultation setting. Future work could involve the use of a series of consultations to get an understanding of how the relationship between empathy and Self-Management Support in areas of high and low deprivation develops and is challenged over time.

7.9 Implications for practice, policy and future research

Future implications for work with the Observation Code (DOC) (Callahan and Bertakis 1991) could be its use with larger data sets, or a data set that compare initial and follow up consultation to determine differences within the development stages of the patient-practitioner relationship. This would provide an insight into how patient-practitioner rapport is formed, maintained and challenged. Other comparisons could include work examining patterns of codes within types of consultation, i.e. emotional versus physical patient complaints.

Chapter 8: Davis and empathy; the relationship between empathy and Self-Management Support in consultations in groups of high and low deprivation

8.1 Summary

The aim of this chapter is to answer objective two of the thesis, which is to determine whether patients' perceptions of GP empathy (as assessed by the CARE Measure) are related to Self-Management Support (including Anticipatory Care) in consultations in high and low deprivation groups.

The videos analysed in this chapter are from a larger database of patient consultations and patient rated measures as described in chapter 4. The consultations have been coded previously using the Davis Observation Code (DOC) (Callahan and Bertakis 1991) (Chapter 7) and these codes will now be compared with patient perceptions of GP empathy.

The results show the high and low deprivation groups associate their GPs empathy score (CARE score) with different measures within the consultation i.e. different Davis codes. Anticipatory Care was not associated with patient's perceptions of their GPs empathy in either the high or low deprivation groups. Patient's perceptions of their GPs empathy were associated with Self-Management Support in the low but not within the high deprivation groups. Potential confounding variables were taken into account.

The findings suggest that patients in high and low deprivation groups may use different criteria to judge their GP's empathy. Self-Management Support in the form of health education and discussion on compliance was associated with the patient's perception of their GPs empathy in the low deprivation group. These associations were not found in the high deprivation group.

8.2 Coding system

Outlines of the Davis code definitions can be found within the Davis chapters (Chapter 6 and 7) while details of the CARE measure are described in Chapter 4.

The Davis codes were analysed using correlations and linear regression analysis. The analysis looks for associations between individual Davis codes and CARE measure scores. The analysis then used linear regression to control for a variety of patient characteristics in order to account for any possible confounding effects.

8.3 Results; Individual Davis Codes

Pearson's correlation co-efficient showed significant associations between patient's reported CARE measures in the low and high deprivation groups and Davis codes. The results are outlined in Table 23.

Table 23: Correlation between (mean) CARE measures and Davis codes in consultations in low and high deprivation groups.

Davis Code	Low Deprivation (n = 234)	High Deprivation (n = 265)
Chatting (CH)	0.11 (0.95)	0.13 (<0.04)
Structured Interaction (SI)	0.07 (0.28)	-0.05 (0.39)
Counselling (CO)	0.13 (<0.05)	0.03 (0.59)
History Taking (HT)	0.18 (<0.01)	-0.02 (0.73)
Family Information (FI)	0.04 (0.51)	0.13 (<0.04)
Treatment Effects (TE)	0.04 (0.51)	0.14 (<0.02)
Health Knowledge (HK)	0.03 (0.63)	0.08 (0.21)
Evaluation Feedback (EF)	0.04 (0.40)	0.06 (0.35)
Physical Examination (PE)	-0.06 (0.40)	0.10 (0.10)
Patient Question (PQ)	0.03 (0.70)	-0.04 (0.54)
Compliance (CM)	0.19 (<0.03)	0.10 (0.11)
Preventative Services (PS)	0.05 (0.43)	-0.01 (0.83)
Health Education (HE)	0.13 (<0.05)	0.04 (0.53)
Health Promotion (HP)	0.10 (0.12)	0.06 (0.38)
Planning Treatment (PT)	0.15 (<0.02)	0.07 (0.29)
Exercise (EX)	-0.02 (0.71)	0.10 (0.10)
Smoking (SM)	-0.03 (0.62)	-0.05 (0.42)
Nutrition (NU)	0.02 (0.74)	-0.01(0.82)
Substance Use (SU)	0.03 (0.70)	0.10 (0.12)
Procedure (PR)	0.03 (0.70)	0.06 (0.40)
Additional Codes		
Blood Pressure (BP)	0.05 (0.46)	0.03 (0.64)
Cholesterol (Chlstrl)	0.02 (0.82)	-0.03 (0.53)
Weight (Wght)	0.01 (0.98)	0.01 (0.85)
Doctor's Line (DOC Line)	-0.01 (0.86)	0.05 (0.41)
Computer Entry (Comp ENT)	0.07 (0.32)	-0.05 (0.43)

In the low deprivation group there was a significant positive correlation between the CARE scores (how empathic the GP was perceived to be) and Davis codes for Counselling, History Taking, Compliance, Health Education, and Planning Treatment.

In the high deprivation group there was a significant positive correlation between the CARE scores and the Davis codes for Chatting, Family Information and Treatment Effects.

There were no significant relationships between the CARE scores and the additional Davis codes for Blood Pressure, Cholesterol, Weight, Doctor’s Line and Computer Entry in either the high or low deprivation groups.

Davis Codes; Self-Management Support & Anticipatory Care

Two variables of combined codes were used to measure the amount of Self-Management Support and Anticipatory Care that occurred within the high and low deprivation group consultations in association with the patient’s perception of their GPs levels of empathy as measured by the CARE measure.

Table 24: Comparison of Self-Management Support & Anticipatory Care between the high and low deprivation groups

Davis Code	CARE Low Deprivation (n = 234)	CARE High Deprivation (n = 265)
Self-Management Support	0.16 (<0.02)	0.07 (0.24)
Anticipatory Care	0.11 (0.09)	0.05 (0.40)

There was a significant relationship found between the CARE scores and the Self-Management Support code within the low deprivation but not within the high deprivation group (Table 24). There was no significant relationship between the CARE scores and the Anticipatory Care code in either the high or low deprivation groups.

Analysis of key confounders

The results were re-examined to account for possible confounders. The data were analysed across four levels. The rationale and methods employed within the logistic regression are outlined in chapter 7.

Table 24 shows the significant associations between CARE scores and Davis Codes in the high and low deprivation groups after controlling for the potential confounders in each model. Although the different models produced slightly different results, a consistent pattern was seen across the models showing that the logistic regression did not affect the significant results found within the high and low deprivation groups with the exception of Treatment Effects which was no longer statistically significant after the patient's age and gender were taken into account in the low deprivation group.

Table 25: Analysis of confounders considered for Davis and Empathy coded data

Variable	Adjusted ¹		Adjusted ²		Adjusted ^{2b}		Adjusted ^{2c}	
	Beta (p-value)		Beta (p-value)		Beta (p-value)		Beta (p-value)	
Deprivation Status	Low Deprivation	High Deprivation	Low Deprivation	High Deprivation	Low Deprivation	High Deprivation	Low Deprivation	High Deprivation
Chatting (CH)	0.11 (0.10)	0.13 (<0.04)	0.11 (0.0.10)	0.13 (<0.04)	0.11 (0.10)	0.13 (<0.04)	0.11 (0.10)	0.13 (<0.05)
Structured Interaction (SI)	0.03 (0.63)	0.03 (0.58)	0.03 (0.63)	0.03 (0.58)	0.03 (0.63)	0.03 (0.58)	0.03 (0.63)	0.03 (0.58)
Counselling (CO)	0.13 (<0.05)	0.03 (0.59)	0.13 (<0.05)	0.03 (0.59)	0.13 (<0.05)	0.03 (0.59)	0.13 (<0.05)	0.03 (0.59)
History Taking (HT)	0.18 (<0.01)	-0.02 (0.73)	0.18 (<0.01)	-0.02 (0.73)	0.18 (<0.01)	-0.02 (0.73)	0.18 (<0.01)	-0.02 (0.73)
Family Information (FI)	0.04 (0.51)	0.13 (<0.04)	0.04 (0.51)	0.13 (<0.04)	0.04 (0.51)	0.13 (<0.04)	0.04 (0.51)	0.13 (<0.04)
Treatment Effects (TE)	0.04 (0.51)	0.08 (0.21)	0.04 (0.51)	0.14 (<0.02)	0.04 (0.51)	0.14 (<0.02)	0.04 (0.51)	0.14 (<0.02)
Health Knowledge (HK)	0.03 (0.63)	0.03 (0.21)	0.03 (0.63)	0.03 (0.21)	0.03 (0.63)	0.03 (0.21)	0.03 (0.63)	0.03 (0.21)
Evaluation Feedback (EF)	0.04 (0.60)	0.06 (0.35)	0.04 (0.60)	0.06 (0.35)	0.04 (0.60)	0.06 (0.35)	0.04 (0.60)	0.06 (0.35)
Physical Examination (PE)	-0.06 (0.40)	0.10 (0.10)	-0.06 (0.40)	0.10 (0.10)	-0.06 (0.40)	0.10 (0.10)	-0.06 (0.40)	0.10 (0.10)
Patient Question (PQ)	0.03 (0.70)	-0.04 (0.54)	0.03 (0.70)	-0.04 (0.54)	0.03 (0.70)	-0.04 (0.54)	0.03 (0.70)	-0.04 (0.54)
Compliance (CM)	0.19 (<0.01)	0.10 (0.11)	0.19 (<0.01)	0.10 (0.11)	0.19 (<0.01)	0.10 (0.11)	0.19 (<0.01)	0.10 (0.11)
Preventative Services (PS)	0.05 (0.43)	-0.01 (0.83)	0.05 (0.43)	-0.01 (0.83)	0.05 (0.43)	-0.01 (0.83)	0.05 (0.43)	-0.01 (0.83)
Health Education (HE)	0.13 (<0.05)	-0.03 (0.61)	0.13 (<0.05)	-0.03 (0.61)	0.13 (<0.05)	-0.03 (0.61)	0.13 (<0.05)	-0.03 (0.61)
Health Promotion (HP)	0.10 (0.12)	0.06 (0.38)	0.10 (0.12)	0.06 (0.38)	0.10 (0.12)	0.06 (0.38)	0.10 (0.12)	0.06 (0.38)
Planning Treatment (PT)	0.15 (<0.02)	0.07 (0.29)	0.15 (<0.02)	0.07 (0.29)	0.15 (<0.02)	0.07 (0.29)	0.15 (<0.02)	0.07 (0.29)
Exercise (EX)	-0.02 (0.71)	0.10 (0.10)	-0.02 (0.71)	0.10 (0.10)	-0.02 (0.71)	0.10 (0.10)	-0.02 (0.71)	0.10 (0.10)
Smoking (SM)	-0.02 (0.71)	0.10 (0.10)	-0.02 (0.71)	0.10 (0.10)	-0.02 (0.71)	0.10 (0.10)	0.03 (0.69)	-0.02 (0.74)
Nutrition (NU)	0.02 (0.74)	-0.01 (0.82)	0.02 (0.74)	-0.01 (0.82)	0.02 (0.74)	-0.01 (0.82)	0.02 (0.74)	-0.01 (0.82)
Substance Use (SU)	0.03 (0.70)	-0.10 (0.12)	0.03 (0.70)	-0.10 (0.12)	0.03 (0.70)	-0.10 (0.12)	0.03 (0.70)	-0.10 (0.12)
Procedure (PR)	0.03 (0.70)	0.06 (0.37)	0.03 (0.70)	0.06 (0.37)	0.03 (0.70)	0.06 (0.37)	0.03 (0.70)	0.06 (0.37)
Additional Codes:								
Blood Pressure (BP)	0.05 (0.46)	0.03 (0.64)	0.05 (0.46)	0.03 (0.64)	0.05 (0.46)	0.03 (0.64)	0.05 (0.46)	0.03 (0.64)
Cholesterol (Chlstrl)	0.02 (0.82)	0.04 (0.53)	0.02 (0.82)	0.04 (0.53)	0.02 (0.82)	0.04 (0.53)	0.02 (0.82)	0.04 (0.53)
Weight (Wght)	0.01 (0.98)	0.01 (0.85)	0.01 (0.98)	0.01 (0.85)	0.01 (0.98)	0.01 (0.85)	0.01 (0.98)	0.01 (0.85)
Fit Note/Sick Line (DOC Line)	-0.01 (0.86)	0.05 (0.41)	-0.01 (0.86)	0.05 (0.41)	-0.01 (0.86)	0.05 (0.41)	-0.01 (0.86)	0.05 (0.41)
Computer Entry (COMP Ent)	0.07 (0.32)	-0.05 (0.43)	0.07 (0.32)	-0.05 (0.43)	0.07 (0.32)	-0.05 (0.43)	0.07 (0.32)	-0.05 (0.43)

Analysis of key confounders; Self-Management & Anticipatory Care

The results for the two combined codes for Self-Management Support and Anticipatory Care were re-examined to account for key confounders, the rationale and methods remained the same as detailed in chapter 7.

Table 26: Analysis of confounders considered for each Davis and Empathy combined codes; Self-Management Support & Anticipatory Care

Variable	Adjusted ¹		Adjusted ²		Adjusted ^{2b}		Adjusted ^{2c}	
	Beta (p-value)		Beta (p-value)		Beta (p-value)		Beta (p-value)	
Deprivation Status	Low Deprivation	High Deprivation	Low Deprivation	High Deprivation	Low Deprivation	High Deprivation	Low Deprivation	High Deprivation
Self-Management Support	0.01 (<0.03)	0.01 (0.23)	0.01 (<0.05)	0.01 (0.33)	0.01 (<0.04)	0.01 (0.31)	0.01 (0.07)	0.01 (0.15)
Anticipatory Care	0.05 (0.11)	0.02 (0.37)	0.05 (0.17)	0.04 (0.19)	0.05 (0.14)	0.04 (0.18)	0.05 (0.15)	0.04 (0.20)

Standardized Coefficients Beta, p values

Adjustments estimates using linear regression with robust standard errors and:

¹ Adjustment for age and gender

² Adjustment for age, gender, multiple morbidity (MM), PHQ-9 and Anxiety

^{2b} Adjustment for age, gender, rating of health in past year (12 months), PHQ-9 and Anxiety

^{2c} Adjustment for age, gender, rating of health in past year (12 months), duration of symptoms, PHQ-9 and Anxiety

Table 26 shows the significant associations between CARE score, Self-Management Support and Anticipatory Care codes in the high and low deprivation groups after controlling for the potential confounders in each model. For the first three models, a consistent pattern was seen showing that the differences within the high and low deprivation settings between CARE scores and the Self-Management Support variable remained significant. However, in the final model, which incorporated duration of symptoms, this association was no longer significant.

8.4 Summary of Findings

This chapter aims to determine whether patients' perception of GP empathy is related to Self-Management Support (including Anticipatory Care) in consultations in high and low deprivation areas. The findings show that patient's perceptions of their GPs empathy are

associated with Davis codes for Counselling, History Taking, Compliance, Health Education, and Planning Treatment in the low deprivation groups, whereas, patient's perceptions of their GPs empathy are associated with Davis codes for Chatting, and Family Information in the high deprivation group. Treatment Effects are associated with patient's perceptions of their GPs empathy however this finding was affected by how long the patient had reported having their symptom.

The analyses on the combined codes for Self-Management Support and Anticipatory Care showed that CARE scores were positively related to Self-Management Support but not Anticipatory Care in consultations in low deprivation areas but not in high deprivation groups (Table 26).

Taking account of potential confounders (patient's age, gender, multiple morbidity, their mental health status, general health, and duration of symptoms) in the analysis did not change the significant associations between CARE scores and individual Davis codes with the exception of Treatment Effects which was no longer statistically significant when the patient's age and gender were taken into account (Table 26).

The analysis of potential confounders was applied to Self-Management Support and Anticipatory Care variables. The significant associations found patient's perceived GP empathy score and Self-Management Support remained statistically significant in the low deprivation group when the confounding variables were taken into account^c. There was no change recorded for the Anticipatory Care variable. However the finding for Self-Management Support was no longer statistically significant when the patient's duration of symptom was taken into account.

^c Adjustment for age, gender, rating of health in past year (12 months), PHQ-9 and Anxiety

8.5 Discussion

Individual Davis codes

In this chapter the results show that the high and low deprivation groups had different associations between perceived GP empathy (CARE Scores) and objective measures of the consultation, as measured by the Davis system. The findings showed that perception of GP empathy in the low deprivation group were positively and significantly associated with Counselling, History Taking, Compliance, Health Education and Planning Treatment. In the high deprivation group, CARE scores were positively and significantly associated with Chatting, Family Information and the discussion of Treatment Effects.

Self-Management Support and Anticipatory Care

The results for the Self-Management Support and Anticipatory Care combination codes showed there was no association between Anticipatory Care and the patient's perceptions of their GPs empathy in either the high and low deprivation groups.

Self-Management Support was associated with the GPs empathy score (CARE score) in the low but not within the high deprivation group.

The results of the individual Davis codes and the combined variables created to measure Self-Management Support and Anticipatory Care showed that there are significant associations between the patient's perception of their GPs empathy and certain consultation tasks in the high and low deprivation groups. Self-Management Support was also associated with the patient's perception of their GPs empathy score in the low deprivation but not in the high deprivation groups. However, the significant associations found between the patients perception of their GPs empathy score and the Davis codes were weak and the levels of significance relatively low, which may be the results of false positive findings due to multiple testing.

The differences between the high and low deprivation groups perceptions of GP empathy maybe explained by the patient's expectations of what will happen or be discussed within the

consultation setting. In the high deprivation group the patients associated their GPs empathy with non-technical aspects of the consultation such as chatting and talking about their family and how they are coping with their current treatment. These findings suggest that the high deprivation group are less likely to consider themselves as technically active partners within the consultations and instead prefer a role that involved less discussion on health education and more social communication (Street Jr 1991).

In the low deprivation group perceptions of empathy were associated with discussion on Compliance, Health Education and Planning Treatment, a finding that is supported by Street et al (Street Jr 1991) who state that information giving within the consultation is influenced by the patient's communication style such as asking questions, and giving opinions which is strongly related to social class and education level. Street et al's (Street Jr 1991) work states that "*more educated patients receive more diagnostic and health information than their lower educated counterparts*". This finding is also discussed by Hall et al (Hall et al. 1988) who suggest that patients of a higher social class receive more communication and information within the consultation overall and that this in turn influences the doctor-patient encounter.

The use of the combined codes to measure Self-Management Support allowed for a range of consultation behaviours and tasks that provide support and encouragement to patients to help them take a central role in managing their own health to be examined.

The results show that for the Self-Management Support category only 3 of the 7 codes recorded a significant association with the patient's CARE score. These codes included Compliance and Health Education in the low deprivation group and Treatment Effects within the high deprivation group. There were no associations found between the CARE scores and the Anticipatory Care combination codes. This work suggests that there is not a lot of discussion on topics relating to Self-Management Support and Anticipatory Care in routine general practice consultations and that what discussion there is tends to focus on educating the patient on medication options and finding out how that treatment plan is helping the patient.

An alternative method of measuring the amount of Self-Management Support and Anticipatory Care may be through patient records to determine which proportion of the practice population that would benefit from anticipatory measures or are capable of

undertaking some Self-Management of their conditions, as well as checking how many patients are already attending practice run clinics for specific conditions such as diabetes, cholesterol and weight management.

The small amount of Self-Management Support (including Anticipatory Care) discussion in the videoed consultations may be the result of Self-Management Support and Anticipatory Care work being carried out by practice team over a longer period of time. The videoed consultations used in the current study offer an insight into one off consultations only.

8.6 Conclusions

In conclusion, the findings suggest that patients in high and low deprivation groups may use different criteria to judge their GP's empathy. In the low deprivation group aspects of Self-Management Support such as discussions on Compliance and Health Education were related to perceived empathy, but this was not the case in the high deprivation group.

8.6.1 Relation to previous Davis work

The effect of deprivation (including education status) on the proportion of consultation time spent on certain communication topics or tasks as coded by the DOC system was been previously discussed by Fiscella et al (Fiscella et al. 2002). They found that GPs adopted a more direct educational approach to patients from higher deprivation groups. Fiscella et al's (Fiscella et al. 2002) work also found that higher deprivation groups were less likely to spend time discussing Health Promotional activities and received fewer Preventative Services.

Practice Policy and Future Research

The results suggest that the practitioner should be sensitive to their patient groups' expectations of the topics and the tasks that will be carried out within the consultation setting.

In terms of policy the findings suggest that Self-Management Support services that encourage people to take decisions and make choices that improve their health, wellbeing and improve

health-related behaviours should take into account differences in patient expectations and willingness to become more active in their health management i.e. Self-Management Support strategies that work in low deprivation groups may not work in high deprivation groups.

Implications for future work on the Davis Observation Code (DOC) (Callahan and Bertakis 1991) and patient's perceptions of empathy could involve a comparison of different consultation types. For example the content of consultations where patients attend to discuss an emotional concern is different from consultations involving a physical concern. A comparison of high and low deprivation groups that address a specific consultation complaint type would assist in the understanding of consultation behaviours communication styles and tasks that relate to a specific type of health concern.

Chapter 9: Davis, Empathy & Outcomes; exploring the effect of Self-Management Support on patient enablement and health outcomes in consultations in high and low deprivation groups

9.1 Summary

The aim of this chapter is to answer objective three of the thesis, which is to explore the effects of Self-Management Support (including Anticipatory Care) on patient enablement, and health outcomes (changes in symptom severity and well-being) in high and low deprivation areas.

The findings show that Patient Enablement was not related to the amount of Self-Management Support or Anticipatory Care in the consultations in either high or low deprivation settings. However, enablement was positively and significantly associated with discussions around Patient Questions in the low deprivation group. The amount of time spent on procedures (such as taking blood) had a negative association with enablement in the low deprivation group. No individual Davis codes were associated with enablement in the high deprivation group.

Changes in health outcome in terms of symptom severity at 1 month post-consultation was not related to overall Self-Management Support in the consultation either high or low deprivation settings. However, Anticipatory Care in the consultation was related positively with symptom improvement in the low deprivation but not high deprivation group.

9.2 Methods

The data describes work undertaken on the videoed consultations using the Davis Observation Coding (DOC) system (Callahan and Bertakis 1991) as defined in chapter 7.

Codes based on the Davis Observation Coding (DOC) system (Callahan and Bertakis 1991) are analysed within this chapter using correlation and linear regression analysis. The analysis looks for associations between the individual Davis codes and patient enablement, and 1 month outcomes (symptom severity change and well-being). The analysis uses linear regression, adding variables in step-wise manner to account for any possible confounding effects of associations between Davis codes and patient outcomes, as outlined in chapter 7.

The MYMOP variables are based on the change in scores from baseline to follow up, and for the remainder of the chapter will be referred to as changes in symptom severity and changes in well-being.

9.3 Patient Enablement Results;

Patient enablement and the Patient Enablement Instrument (PEI)(Howie et al. 1998) have been discussed previously in Introduction chapter (Chapter 3).

Individual Davis Codes

Pearson's correlation co-efficients showed associations between patient enablement scores (PEI) in the low and high deprivation groups and the reported Davis codes measured from the videos (Table 27).

Table 27: Correlations between PEI (average item) scores and individual Davis codes in consultations in low and high deprivation areas (p values in brackets).

Davis Code	Low Deprivation (n = 234)	High Deprivation (n = 265)
Chatting (CH)	0.06 (0.37)	0.10 (0.11)
Structured Interaction (SI)	0.07 (0.28)	-0.05 (0.39)
Counselling (CO)	-0.02 (0.74)	0.04 (0.57)
History Taking (HT)	-0.02 (0.79)	-0.08 (0.19)
Family Information (FI)	0.03 (0.62)	0.09 (0.16)
Treatment Effects (TE)	-0.07 (0.31)	0.03 (0.66)
Health Knowledge (HK)	-0.01 (0.84)	-0.03 (0.63)
Evaluation Feedback (EF)	0.05 (0.49)	0.01 (0.88)
Physical Examination (PE)	-0.02 (0.78)	0.01 (0.89)
Patient Question (PQ)	0.14 (<0.04)	-0.03 (0.63)
Compliance (CM)	-0.06 (0.40)	-0.02 (0.79)
Preventative Services (PS)	0.00 (0.96)	0.01 (0.87)
Health Education (HE)	0.10 (0.15)	-0.08 (0.22)
Health Promotion (HP)	-0.01 (0.98)	0.01 (0.96)
Planning Treatment (PT)	-0.07 (0.29)	-0.12 (0.06)
Exercise (EX)	-0.01 (0.93)	-0.06 (0.31)
Smoking (SM)	-0.03 (0.62)	-0.05 (0.42)
Nutrition (NU)	0.11 (0.88)	-0.03 (0.58)
Substance Use (SU)	0.04 (0.56)	-0.09 (0.16)
Procedure (PR)	-0.13 (<0.05)	-0.02 (0.72)
Additional Codes		
Blood Pressure (BP)	-0.02 (0.72)	-0.05 (0.46)
Cholesterol (Chlstrl)	0.01 (0.85)	0.05 (0.42)
Weight (Wght)	0.01 (0.94)	0.02 (0.69)
Doctor's Line (DOC Line)	0.02 (0.78)	0.04 (0.52)
Computer Entry (Comp ENT)	0.03 (0.65)	0.01 (0.83)

In the low deprivation group there was a significant positive correlation between patient enablement scores and Patient Questions and a negative correlation between patient enablement scores and Procedures.

In the high deprivation group there were no significant positive correlations between patient enablement scores and the Davis codes.

The additional Davis codes Blood Pressure, Cholesterol, Weight, Doctor’s Line and Computer Entry were then analysed in association with the PEI scores. There were no significant relationships between PEI scores and the additional Davis codes in the high and low deprivation groups (Table 27).

9.4 Patient Enablement Index (PEI); Self-Management Support & Anticipatory Care

Two variables of combined codes were created and added to the Davis analysis to assess the associations between Self-Management Support, Anticipatory Care and PEI in low and high deprivation groups.

The Self-Management Support and the Anticipatory Care variables are a combination of codes and have previously been described in chapter 7.

Table 28: Correlations between patient enablement scores (PEI) and Self-Management Support/Anticipatory Care combination codes in consultations in low and high deprivation groups.

Davis Code	Low Deprivation (n = 234)	High Deprivation (n = 265)
Self-Management Support	0.04 (0.57)	-0.05 (0.42)
Anticipatory Care	-0.01 (0.99)	0.01 (0.93)

There were no significant relationships between patient enablement scores and the Self-Management Support and Anticipatory Care codes within the low and the high deprivation groups (Table 28).

9.5 Analysis of key confounders

Table 29 shows the two significant results of the above correlation analysis were re-examined to account for the possible confounding effect of differences found between the characteristics of the high and low deprivation groups, as already shown in Chapter 7.

Table 29 shows the significant associations between PEI score and Davis codes in the high and low deprivation groups after controlling for the potential confounders in each model. The different models produced slightly different results, though a consistent pattern was seen across the models. The associations between PEI and Patient Question remained statistically significant after controlling for patient characteristics in the 4 models tested.

However, the associations between PEI and Procedure were no longer significant when analysed alongside the confounding variables in models 2^d and 2b^e. The results in Table 28 also show that individual Davis codes Chatting and Family Information were significant in models 2, 2b and for Family Information also in 2c^f within the high deprivation group.

In summary, patient enablement was associated with only two Davis codes within the low deprivation but not the high deprivation group. Patient enablement was associated in the low deprivation group with Patient Questions and Procedures. These associations remained statistically significant when the confounding variables were taken into account. However, the associations between PEI and Procedures were no longer statistically significant when the patient's multiple morbidity status, reported PHQ-9 and anxiety scores and the patient's rating of their health in the past 12 months were taken into account.

^d Adjustment for age, gender, multiple morbidity (MM), PHQ-9 and Anxiety

^e Adjustment for age, gender, rating of health in past year (12 months), PHQ-9 and Anxiety

^f Adjustment for age, gender, rating of health in past year (12 months), duration of symptoms, PHQ-9 and Anxiety

Table 29: Analysis of confounders considered for each Davis code; Patient Enablement scores in consultations in low and high deprivation groups.

Variable	Adjusted ¹		Adjusted ²		Adjusted ^{2b}		Adjusted ^{2c}	
	Beta (p-value)		Beta (p-value)		Beta (p-value)		Beta (p-value)	
	Low Deprivation	High Deprivation	Low Deprivation	High Deprivation	Low Deprivation	High Deprivation	Low Deprivation	High Deprivation
Chatting (CH)	0.11 (0.32)	0.16 (0.11)	0.04 (0.73)	0.24 (<0.04)	0.02 (0.89)	0.24 (<0.04)	0.12 (0.37)	0.28 (0.10)
Structured Interaction (SI)	0.40 (0.20)	-0.12 (0.58)	0.40 (0.20)	-0.10 (0.65)	0.41 (0.19)	-0.11 (0.62)	0.38 (0.24)	-0.25 (0.34)
Counselling (CO)	0.03 (0.84)	0.18 (0.50)	0.01 (0.92)	0.39 (0.15)	0.03 (0.85)	0.36 (0.18)	-0.08 (0.56)	0.21 (0.56)
History Taking (HT)	0.01 (0.86)	-0.04 (0.16)	0.03 (0.42)	-0.02 (0.91)	0.03 (0.50)	-0.00 (0.94)	0.02 (0.64)	-0.01 (0.87)
Family Information (FI)	0.09 (0.29)	0.13 (0.06)	0.11 (0.21)	0.26 (<0.00)	0.12 (0.16)	0.25 (<0.00)	0.03 (0.75)	0.20 (<0.01)
Treatment Effects (TE)	-0.13 (0.31)	0.09 (0.47)	-0.08 (0.57)	0.15 (0.20)	-0.10 (0.46)	0.15 (0.21)	-0.11 (0.48)	0.17 (0.20)
Health Knowledge (HK)	0.04 (0.84)	-0.05 (0.68)	0.08 (0.66)	-0.11 (0.38)	0.10 (0.59)	-0.07 (0.60)	0.11 (0.61)	-0.13 (0.39)
Evaluation Feedback (EF)	0.13 (0.27)	0.01 (0.91)	0.16 (0.20)	-0.04 (0.73)	0.18 (0.15)	-0.03 (0.81)	0.15 (0.32)	-0.15 (0.29)
Physical Examination (PE)	-0.04 (0.71)	-0.01 (0.94)	-0.01 (0.92)	-0.02 (0.83)	-0.01 (0.90)	0.00 (0.98)	-0.01 (0.90)	-0.04 (0.67)
Patient Question (PQ)	0.29 (<0.03)	-0.11 (0.34)	0.35 (<0.02)	-0.13 (0.27)	0.31 (<0.03)	-0.12 (0.31)	0.36 (<0.03)	-0.04 (0.75)
Compliance (CM)	-0.12 (0.36)	-0.05 (0.74)	-0.11 (0.41)	-0.04 (0.79)	-0.14 (0.35)	0.04 (0.82)	-0.07 (0.67)	0.03 (0.89)
Preventative Services (PS)	0.39 (0.73)	-0.75 (0.28)	0.43 (0.70)	-0.82 (0.23)	0.27 (0.81)	-0.97 (0.15)	0.01 (0.99)	-0.31 (.86)
Health Education (HE)	0.11 (0.13)	-0.10 (0.18)	0.12 (0.13)	-0.11 (0.11)	0.11 (0.17)	-0.13 (0.08)	0.14 (0.12)	-0.13 (0.12)
Health Promotion (HP)	0.03 (0.87)	0.01 (0.95)	0.09 (0.65)	0.13 (0.35)	0.09 (0.65)	0.16 (0.26)	0.09 (0.68)	0.07 (0.65)
Planning Treatment (PT)	-0.03 (0.58)	-0.08 (0.09)	-0.01 (0.89)	-0.70 (0.16)	-0.02 (0.71)	-0.06 (0.20)	-0.05 (0.48)	-0.10 (0.07)
Exercise (EX)	-0.24 (0.25)	-0.14 (0.54)	-0.07 (0.77)	-0.14 (0.54)	-0.05 (0.85)	-0.18 (0.43)	0.04 (0.90)	-0.55 (0.06)
Smoking (SM)	-0.19 (0.56)	-0.16 (0.23)	-0.16 (0.69)	-0.10 (0.47)	-0.07 (0.88)	-0.06 (0.67)	-0.14 (0.76)	-0.06 (0.70)
Nutrition (NU)	0.15 (0.55)	-0.06 (0.67)	0.15 (0.54)	0.01 (0.92)	0.15 (0.53)	0.02 (0.86)	(0.01 (0.97)	-0.06 (0.69)
Substance Use (SU)	0.23 (0.28)	-0.26 (0.09)	0.27 (0.21)	-0.10 (0.56)	0.24 (0.27)	0.07 (0.65)	0.18 (0.44)	-0.02 (0.90)
Procedure (PR)	-0.33 (<0.05)	-0.00 (1.00)	-0.34 (0.06)	-0.04 (0.85)	-0.32 (0.08)	-0.06 (0.78)	-0.41 (<0.04)	-0.15 (0.54)
Additional Codes:								
Blood Pressure (BP)	-0.13 (0.42)	-0.18 (0.17)	-0.12 (0.43)	-0.14 (0.30)	-0.12 (0.43)	-0.10 (0.50)	-0.07 (0.71)	-0.04 (0.81)
Cholesterol (Chlstrl)	0.17 (0.55)	0.15 (0.54)	0.18 (0.54)	0.16 (0.51)	0.19 (0.52)	0.13 (0.59)	0.41 (0.43)	0.21 (0.46)
Weight (Wght)	-0.01 (0.94)	0.09 (0.64)	-0.00 (0.99)	0.19 (0.32)	0.01 (0.94)	0.26 (0.18)	-0.01 (0.67)	0.40 (0.09)
Fit Note/Sick Line (DOC Line)	0.11 (0.50)	0.22 (0.26)	0.07 (0.67)	0.42 (0.08)	0.05 (0.75)	0.39 (0.10)	0.04 (0.84)	0.40 (0.15)
Computer Entry (COMP Ent)	-0.16 (0.28)	0.07 (0.49)	-0.13 (0.39)	0.16 (0.14)	-0.14 (0.36)	0.18 (0.10)	0.06 (0.78)	0.08 (0.54)

Standardized Coefficients Beta, p values

Adjustments estimates using linear regression with robust standard errors and:

¹ Adjustment for age and gender² Adjustment for age, gender, multiple morbidity (MM), PHQ-9 and Anxiety^{2b} Adjustment for age, gender, rating of health in part year (12 months), PHQ-9 and Anxiety^{2c} Adjustment for age, gender, rating of health in part year (12 months), duration of symptoms, PHQ-9 and Anxiety

9.6 Analysis of key confounders; Self-Management & Anticipatory Care

The results of the two combined codes for Self-Management Support and Anticipatory Care were examined to account for key confounders. This work aimed to determine if the different associations found between the PEI and the two combined codes in the two deprivation settings were due to the potential confounders.

The data were analysed across four models using multiple linear regression analysis in accordance with the methods outlined in Chapter 7.

Table 30: Analysis of confounders considered for associations between Davis and combined codes – Self-Management Support & Anticipatory Care

Variable	Adjusted ¹		Adjusted ²		Adjusted ^{2b}		Adjusted ^{2c}	
	Beta (p-value)		Beta (p-value)		Beta (p-value)		Beta (p-value)	
Deprivation Status	Low Deprivation	High Deprivation	Low Deprivation	High Deprivation	Low Deprivation	High Deprivation	Low Deprivation	High Deprivation
Self-Management Support	0.02 (0.61)	-0.04 (0.32)	0.04 (0.34)	-0.03 (0.38)	0.03 (0.37)	-0.03 (0.45)	0.04 (0.31)	-0.02 (0.58)
Anticipatory Care	-0.00 (0.99)	0.01 (0.94)	0.07 (0.70)	0.13 (0.35)	0.06 (0.73)	0.15 (0.30)	0.08 (0.69)	0.07 (0.67)

Standardized Coefficients Beta, p values

Adjustments estimates using linear regression with robust standard errors and:

¹ Adjustment for age and gender

² Adjustment for age, gender, multiple morbidity (MM), PHQ-9 and Anxiety

^{2b} Adjustment for age, gender, rating of health in part year (12 months), PHQ-9 and Anxiety

^{2c} Adjustment for age, gender, rating of health in part year (12 months), duration of symptoms, PHQ-9 and Anxiety

There were no significant associations between PEI score and Self-Management Support and Anticipatory Care codes in the high and low deprivation groups before or after controlling for the potential confounders in each model. This finding was consistent across all 4 models.

In summary, the findings show that patient enablement was not associated with any of the Self-Management Support and Anticipatory Care codes.

9.7 Outcome Results (MYMOP severity of symptom)

MYMOP severity of symptoms; Change in profile score

The change in score between the baseline and follow up for changes in symptoms severity in the low and high deprivation groups were considered. Negative results found for MYMOP change scores represent a positive effect on the patient’s outcome.

Table 31: MYMOP severity of symptom; profile score at consultation and 1 month follow up

	Scores	Statistic	All Areas	Low Deprivation	High Deprivation	p-value
MYMOP Profile Score	Baseline	N (missing)	439 (60)	207 (27)	202 (33)	
		Mean (SD)	4.7 (1.6)	4.5 (1.5)	4.8 (1.6)	<0.03
		Min - Max	[1, 7]	[1, 7]	[1, 7]	
	Follow-up	N (missing)	425 (74)	215 (19)	210 (55)	
		Mean (SD)	3.1 (1.9)	2.8 (1.8)	3.5 (2.0)	<0.00
		Min - Max	[1, 7]	[1, 7]	[1, 7]	
	Change	N (missing)	381 (118)	194 (40)	187 (78)	
		Mean (SD)	-1.5 (2.1)	-1.8 (2.1)	-1.2 (2.1)	<0.01
		Min - Max	[-6, 6]	[-6, 6]	[-6, 6]	

The findings in Table 31 show that there were highly significant results recorded for baseline, follow-up and change symptom severity between the high and low deprivation group. In the high deprivation group there were higher scores for baseline and follow up compared with the low deprivation group. Also, in the low deprivation group the change between baseline and follow up were smaller compared with the high deprivation group.

Individual Davis Codes

Pearson’s correlation co-efficient showed associations between patient outcomes and changes in symptoms severity (MYMOP change score) in the high and low deprivation groups and the objectively measured Davis codes from the videos (Table 32).

Table 32: Correlations between changes in symptom severity and individual Davis codes between consultations in high and low deprivation groups.

Davis Code	Low Deprivation (n = 234)	High Deprivation (n = 265)
Chatting (CH)	-0.14 (<0.05)	-0.08 (0.22)
Structured Interaction (SI)	0.08 (0.26)	-0.02 (0.77)
Counselling (CO)	0.11 (0.13)	0.07 (0.32)
History Taking (HT)	0.10 (0.14)	0.13 (<0.05)
Family Information (FI)	-0.04 (0.58)	0.07 (0.31)
Treatment Effects (TE)	-0.07 (0.36)	0.04 (0.51)
Health Knowledge (HK)	0.06 (0.37)	-0.08 (0.22)
Evaluation Feedback (EF)	-0.13 (0.06)	-0.20 (<0.03)
Physical Examination (PE)	-0.08 (0.24)	-0.02 (0.79)
Patient Question (PQ)	-0.08 (0.23)	-0.08 (0.26)
Compliance (CM)	-0.13 (<0.05)	0.08 (0.24)
Preventative Services (PS)	0.05 (0.45)	0.05 (0.47)
Health Education (HE)	0.01 (0.94)	-0.13 (<0.05)
Health Promotion (HP)	-0.12 (0.08)	0.09 (0.16)
Planning Treatment (PT)	0.09 (0.19)	0.09 (0.16)
Exercise (EX)	-0.08 (0.24)	-0.15 (<0.02)
Smoking (SM)	0.05 (0.48)	0.08 (0.24)
Nutrition (NU)	-0.08 (0.26)	-0.04 (0.51)
Substance Use (SU)	-0.02 (0.75)	0.20 (<0.01)
Procedure (PR)	0.02 (0.77)	0.02 (0.74)
Additional Codes		
Blood Pressure (BP)	-0.03 (<0.00)	-0.07 (0.28)
Cholesterol (Chlstrl)	-0.01 (0.90)	0.01 (0.83)
Weight (Wght)	0.05 (0.48)	-0.11 (0.11)
Doctor's Line (DOC Line)	0.05 (0.49)	0.10 (0.13)
Computer Entry (Comp ENT)	0.16 (<0.02)	0.12 (0.07)

In the low deprivation group there was a significant negative correlation between changes in symptom severity and the Davis codes for Chatting and Compliance. The negative finding shows that higher levels of Chatting and Compliance were associated with a reduction in reported symptom severity. There was also a negative correlation between change in symptoms severity and Evaluation Feedback, Health Education, Exercise and Substance Use within the high deprivation group. These findings show that discussion of these codes was associated with a reduction in reported symptom severity. In the high deprivation group there was a significant positive correlation between changes in symptom severity and the Davis

codes for History Taking and Substance Use. This finding suggests that discussion of these codes was associated with an increase in reported symptom severity.

The additional Davis codes Blood Pressure, Cholesterol, Weight, Doctor's Line and Computer Entry were then analysed in association with the changes in symptom severity. There was a significant negative correlation and therefore a positive effect between changes in symptom severity and Blood Pressure, as well as a significant positive relationship between Computer Entry in the low deprivation group. Therefore taking Blood Pressure within the consultation was associated with a reduction in symptom severity however, Computer Entry increased change in symptoms severity.

These findings on changes on symptom severity suggest that chatting in the low deprivation group can facilitate the GP to build rapport with the patient which can reassure and encourage the patient to discuss more sensitive issues surrounding their health concern such as how compliant they are to their current treatment plan or reasons for not being compliant. However in the high deprivation group consultation time that was spent discussing what the patient believed about their health concern (health education) and providing the patient with feedback on on-going or past investigations (evaluation feedback) was rated as more important to the patient's perceptions of symptom change. Discussions on the patient's health beliefs could also allow the patient and GP to discuss behaviours around these beliefs such as the patient's substance use or how much exercise the patient undertakes. The findings suggest that different factors in the high and low deprivation patient groups make a significant impact on the patient's perceptions of changes in symptom severity.

Therefore in summary observations of Chatting, and discussions on Compliance both had a positive effect on reducing change in symptom severity in the low deprivation group. In the high deprivation group positive effects on change in symptom severity were associated with Evaluation Feedback, and discussions on Health Education, Exercise and Substance Use.

9.8 Outcomes; Self-Management Support & Anticipatory Care

The Self-Management Support and Anticipatory Care variables were compared with changes in symptom severity. The methods were previously outlined in chapter 7.

Table 33: Correlations between changes in symptom severity and Self-Management Support/Anticipatory Care in consultations between low and high deprivation groups.

Davis Code	Low Deprivation (n = 234)	High Deprivation (n = 265)
Self-Management Support	-0.08 (0.24)	-0.05 (0.41)
Anticipatory Care	-0.11 (0.11)	0.10 (0.14)

Table 33 shows correlations between changes in symptom severity and combination codes measuring Self-Management Support and Anticipatory Care between the low and high deprivation groups. The findings show that there was no statistically significant association between change in symptom severity and Self-Management Support or Anticipatory Care in both the high and low deprivation group.

9.9 Analysis of key confounders

Table 34 shows the associations between changes in symptom severity scores and Davis codes in the high and low deprivation groups after controlling for the potential confounders in each model (Chapter 7). The results show that the Davis codes for Blood Pressure and Computer Entry remained significant (or bordering on significance) after controlling for patient characteristic in the 4 models tested.

However, individual Davis codes for Chatting, Compliance, Health Education and Exercise were no longer statistically significant when the confounding variables in all models were taken into account. History Taking was no longer significant when controlling for variables by model 1 as was Evaluation Feedback in relation to model 2 and Substance Use in relation to model 2c.

Table 34: Analysis of confounders considered for each Davis code and changes in symptom severity

Variable	Adjusted ¹		Adjusted ²		Adjusted ^{2b}		Adjusted ^{2c}	
	Beta (p-value)		Beta (p-value)		Beta (p-value)		Beta (p-value)	
Deprivation Status	Low Deprivation	High Deprivation	Low Deprivation	High Deprivation	Low Deprivation	High Deprivation	Low Deprivation	High Deprivation
Chatting (CH)	-0.09 (0.06)	-0.06 (0.35)	-0.06 (0.24)	-0.06 (0.32)	-0.06 (0.25)	-0.04 (0.47)	-0.06 (0.21)	-0.06 (0.34)
Structured Interaction (SI)	0.07 (0.58)	0.05 (0.63)	0.09 (0.43)	0.04 (0.65)	0.09 (0.44)	0.04 (0.63)	0.10 (0.37)	0.03 (0.77)
Counselling (CO)	0.02 (0.62)	0.12 (0.34)	-0.02 (0.62)	0.07 (0.58)	-0.02 (0.65)	0.06 (0.63)	-0.02 (0.66)	0.02 (0.89)
History Taking (HT)	0.04 (<0.01)	0.02 (<0.01)	0.01 (0.42)	0.03 (0.11)	0.01 (0.41)	0.02 (0.16)	0.02 (0.33)	0.02 (0.17)
Family Information (FI)	-0.02 (0.57)	0.03 (0.41)	-0.06 (0.10)	-0.01 (0.90)	-0.06 (0.11)	-0.00 (0.96)	-0.06 (0.13)	0.00 (0.97)
Treatment Effects (TE)	0.03 (0.64)	0.16 (<0.02)	-0.02 (0.75)	0.11 (0.07)	-0.03 (0.64)	0.09 (0.16)	-0.01 (0.88)	0.10 (0.12)
Health Knowledge (HK)	0.05 (0.49)	-0.04 (0.53)	0.03 (0.67)	-0.00 (0.97)	0.02 (0.83)	-0.03 (0.63)	0.02 (0.81)	-0.02 (0.79)
Evaluation Feedback (EF)	-0.08 (0.14)	-0.11 (0.07)	-0.11 (0.04)	-0.06 (0.31)	-0.10 (<0.05)	-0.07 (0.22)	-0.11 (<0.05)	-0.08 (0.19)
Physical Examination (PE)	-0.05 (0.19)	0.01 (0.98)	-0.06 (0.11)	0.03 (0.39)	-0.06 (0.13)	0.04 (0.37)	-0.07 (0.07)	0.04 (0.34)
Patient Question (PQ)	-0.01 (0.99)	-0.02 (0.69)	-0.03 (0.62)	-0.02 (0.78)	-0.03 (0.63)	-0.02 (0.69)	-0.02 (0.72)	-0.04 (0.46)
Compliance (CM)	0.00 (0.94)	0.13 (0.11)	-0.03 (0.63)	0.06 (0.47)	-0.05 (0.42)	0.04 (0.62)	-0.05 (0.45)	0.04 (0.64)
Preventative Services (PS)	0.39 (0.36)	0.88 (0.23)	0.53 (0.18)	0.85 (0.21)	0.48 (0.23)	1.06 (0.12)	0.48 (0.24)	0.10 (0.13)
Health Education (HE)	0.03 (0.39)	-0.06 (0.13)	0.01 (0.78)	-0.03 (0.35)	0.01 (0.84)	-0.04 (0.29)	0.02 (0.64)	-0.03 (0.46)
Health Promotion (HP)	-0.06 (0.41)	0.07 (0.33)	-0.18 (<0.01)	0.02 (0.75)	-0.18 (<0.01)	0.01 (0.86)	-0.17 (<0.02)	0.05 (0.47)
Planning Treatment (PT)	0.05 (<0.02)	0.03 (0.17)	0.04 (0.11)	0.03 (0.25)	0.04 (0.09)	0.03 (0.27)	0.05 (0.07)	0.03 (0.17)
Exercise (EX)	0.01 (0.91)	-0.22 (0.06)	-0.13 (0.20)	-0.20 (0.08)	-0.12 (0.23)	-0.18 (0.11)	-0.11 (0.28)	-0.10 (0.41)
Smoking (SM)	0.05 (0.68)	0.01 (0.88)	-0.14 (0.40)	0.02 (0.76)	-0.15 (0.40)	0.00 (0.99)	-0.16 (0.36)	0.01 (0.86)
Nutrition (NU)	-0.08 (0.40)	-0.01 (0.93)	-0.13 (0.17)	-0.03 (0.62)	-0.13 (0.17)	-0.04 (0.49)	-0.11 (0.27)	-0.02 (0.79)
Substance Use (SU)	-0.10 (0.26)	0.22 (<0.01)	-0.14 (0.12)	0.19 (<0.03)	-0.15 (0.09)	0.18 (<0.04)	-0.16 (0.09)	0.16 (0.06)
Procedure (PR)	0.04 (0.55)	-0.08 (0.46)	0.06 (0.36)	-0.11 (0.32)	0.06 (0.40)	-0.08 (0.42)	0.04 (0.55)	-0.08 (0.46)
Additional Codes:								
Blood Pressure (BP)	-0.22 (<0.01)	-0.06 (0.45)	-0.22 (<0.00)	-0.06 (0.38)	-0.22 (<0.00)	-0.07 (0.30)	-0.24 (<0.00)	-0.09 (0.23)
Cholesterol (Chlstrl)	-0.08 (0.69)	0.01 (0.95)	-0.17 (0.36)	-0.02 (0.84)	-0.18 (0.33)	-0.05 (0.65)	-0.19 (0.31)	-0.05 (0.67)
Weight (Wght)	0.07 (0.28)	-0.10 (0.29)	0.02 (0.75)	-0.19 (<0.03)	0.02 (0.70)	-0.22 (<0.01)	0.03 (0.60)	-0.21 (<0.03)
Fit Note/Sick Line (DOC Line)	0.06 (0.33)	0.10 (0.35)	-0.00 (0.98)	-0.02 (0.89)	-0.01 (0.94)	0.00 (0.97)	-0.01 (0.89)	0.01 (0.95)
Computer Entry (COMP Ent)	0.19 (<0.02)	0.09 (0.10)	0.15 (<0.05)	0.06 (0.27)	0.16 (<0.05)	0.03 (0.53)	0.16 (<0.05)	0.03 (0.63)

Standardized Coefficients Beta, p values

Adjustments estimates using linear regression with robust standard errors and:

¹ Adjustment for baseline MYMOP (severity), age and gender

² Adjustment for baseline MYMOP (severity), age, gender, multiple morbidity (MM), PHQ-9 and Anxiety

^{2b} Adjustment for baseline MYMOP (severity), age, gender, rating of health in past year (12 months), PHQ-9 and Anxiety

^{2c} Adjustment for baseline MYMOP (severity), age, gender, rating of health in past year (12 months), duration of symptoms, PHQ-9 and Anxiety

9.10 Analysis of confounders; Self-Management & Anticipatory Care

The combination codes for Self-Management Support and Anticipatory Care were also analysed taking into account potential confounding variables (as outlined in chapter 7).

Table 35: Analysis of confounders considered for each Davis and empathy combined codes – Self-Management Support & Anticipatory Care and changes in symptom severity

Variable	Adjusted ¹		Adjusted ²		Adjusted ^{2b}		Adjusted ^{2c}	
	Beta (p-value)		Beta (p-value)		Beta (p-value)		Beta (p-value)	
	Low Deprivation	High Deprivation	Low Deprivation	High Deprivation	Low Deprivation	High Deprivation	Low Deprivation	High Deprivation
Self-Management Support	0.01 (0.62)	0.00 (0.81)	-0.01 (0.56)	0.00 (0.82)	-0.01 (0.42)	-0.00 (0.83)	-0.08 (0.62)	0.00 (0.92)
Anticipatory Care	-0.05 (0.51)	0.07 (0.28)	-0.16 (<0.03)	0.03 (0.66)	-0.16 (<0.03)	0.02 (0.75)	-0.15 (<0.04)	0.06 (0.39)

Standardized Coefficients Beta, p values

Adjustments estimates using linear regression with robust standard errors and:

¹ Adjustment for baseline MYMOP (severity), age and gender

² Adjustment for baseline MYMOP (severity), age, gender, multiple morbidity (MM), PHQ-9 and Anxiety

^{2b} Adjustment for baseline MYMOP (severity), age, gender, rating of health in part year (12 months), PHQ-9 and Anxiety

^{2c} Adjustment for baseline MYMOP (severity), age, gender, rating of health in part year (12 months), duration of symptoms, PHQ-9 and Anxiety

Table 35 shows that there were no statistically significant associations between changes in symptom severity and Self-Management Support codes in the high and low deprivation groups when the potential confounders were taken into account. However, there was a significant negative association and therefore positive effect recorded between patient outcomes and Anticipatory Care codes in the low deprivation groups. This finding was consistent across all 3 models.

In summary, the findings show that changes in symptom severity were associated with discussions on Weight, Health Promotion and Blood Pressure checks as well as instances of Computer Entry within the high deprivation groups. In the low deprivation group Chatting, discussion on Compliance, Blood Pressure and the amount of Computer Entry undertaken within the consultations were associated changes in symptom severity. In the high

deprivation group History Taking, Evaluation Feedback, Health Education and discussions on Exercise and Substance Use were associated with changes in symptom severity.

The results found for Blood Pressure and Computer Entry and the codes relating to Self-Management Support remained statistically significantly when the confounding variables were taken into account. However, the rest of the Davis codes were no longer statistically significant when the confounding variables were taken into account.

9.11 Outcome Results (changes in well-being)

MYMOP outcomes; Change in profile score

The change in MYMOP score for well-being was analysed. The negative results found for MYMOP change scores represent a positive effect on the patient's outcome.

MYMOP well-being results therefore were no longer significant when the list of potential confounding variables were taken into account.

Table 36: MYMOP well-being; profile score at consultation and 1 month follow up

	Scores	Statistic	All Areas	Low Deprivation	High Deprivation	p-value
MYMOP Profile Score	Baseline	N (missing)	478 (21)	226 (8)	252 (13)	
		Mean (SD)	3.5 (1.7)	3.3 (1.6)	3.8 (1.8)	<0.01
		Min - Max	[1, 7]	[1, 7]	[1, 7]	
	Follow-up	N (missing)	429 (70)	219 (15)	210 (55)	
		Mean (SD)	3.1 (1.8)	2.8 (1.6)	3.5 (1.9)	<0.00
		Min - Max	[1, 7]	[1, 7]	[1, 7]	
	Change	N (missing)	414 (85)	212 (44)	202 (63)	
		Mean (SD)	0.4 (2.0)	0.5 (1.9)	0.2 (2.1)	0.06
		Min - Max	[-5, 6]	[-5, 6]	[-5, 6]	

The findings in Table 36 show that higher baseline scores for well-being were recorded in the low deprivation groups at baseline and follow up. Despite this there was no statistically significant change in well-being between the high and low deprivation groups.

Individual Davis Codes

Pearson's correlation co-efficient for associations between Davis codes and changes in well-being are shown in (Table 37) for the low and high deprivation groups.

Table 37: Correlations between changes in well-being and individual Davis codes in consultations in low and high deprivation groups.

Davis Code	Low Deprivation (n = 234)	High Deprivation (n = 265)
Chatting (CH)	-0.04 (0.59)	-0.08 (0.20)
Structured Interaction (SI)	0.04 (0.60)	0.04 (0.55)
Counselling (CO)	0.15 (<0.03)	0.10 (0.12)
History Taking (HT)	0.21 (<0.01)	0.14 (<0.03)
Family Information (FI)	0.11 (0.11)	0.05 (0.41)
Treatment Effects (TE)	0.08 (0.22)	0.05 (0.43)
Health Knowledge (HK)	0.03 (0.70)	-0.06 (0.36)
Evaluation Feedback (EF)	-0.10 (0.12)	-0.02 (0.71)
Physical Examination (PE)	-0.09 (0.19)	-0.05 (0.40)
Patient Question (PQ)	0.03 (0.66)	0.01 (0.88)
Compliance (CM)	-0.04 (0.56)	0.12 (<0.05)
Preventative Services (PS)	0.07 (0.32)	0.06 (0.34)
Health Education (HE)	0.06 (0.36)	-0.07 (0.26)
Health Promotion (HP)	-0.02 (0.72)	0.09 (0.14)
Planning Treatment (PT)	0.09 (0.20)	0.15 (<0.02)
Exercise (EX)	-0.05 (0.42)	-0.06 (0.35)
Smoking (SM)	-0.07 (0.28)	0.07 (0.26)
Nutrition (NU)	0.07 (0.27)	0.08 (0.21)
Substance Use (SU)	0.03 (0.62)	0.15 (<0.02)
Procedure (PR)	-0.03 (0.68)	-0.06 (0.34)
Additional Codes		
Blood Pressure (BP)	-0.10 (0.14)	-0.09 (0.15)
Cholesterol (Chlstrl)	0.01 (0.94)	0.01 (0.88)
Weight (Wght)	0.01 (0.93)	-0.05 (0.47)
Doctor's Line (DOC Line)	0.24 (<0.00)	0.09 (0.18)
Computer Entry (Comp ENT)	0.11 (0.11)	0.10 (0.13)

In the low deprivation group there was a significant positive correlation between changes in well-being and the Davis codes for Counselling, and History Taking.

In the high deprivation group there was a significant positive correlation between changes in well-being and the Davis codes for History Taking, Compliance, Planning Treatment and Substance Use. The additional Davis codes for Blood Pressure, Cholesterol, Weight, Doctor’s Line and Computer Entry were then analysed. There was a significant positive correlation between the changes in well-being and Doctor’s Line in the low deprivation group.

9.12 Well-being; Self-Management Support & Anticipatory Care

The associations between combination codes for Self-Management Support and Anticipatory Care and changes in well-being were compared.

Table 38: Correlations between changes in well-being, Self-Management Support/Anticipatory Care and individual Davis codes in consultations in low and high deprivation groups.

Davis Code	Low Deprivation (n = 234)	High Deprivation (n = 265)
Self-Management Support	0.05 (0.47)	0.02 (0.76)
Anticipatory Care	-0.01 (0.85)	0.10 (0.11)

There was no significant relationship between changes in well-being and the Self-Management Support or the Anticipatory Care codes within the low and high deprivation groups (Table 39).

9.13 Analysis of key confounders

The significant associations between the Davis codes and changes in well-being were compared against the models of confounding variables. Table 39 shows that two of the Davis codes for History Taking and Doctor’s Line remained statistically significant after controlling for age and gender (model 1). However, these codes were no longer statistically significant when the confounding variables in models 2-2c were taken into account.

The Davis codes for Counselling, Compliance, Planning Treatment and Substance Use were no longer statistically significant when the confounding variables were taken into account.

Table 39: Analysis of confounders considered for each Davis code; Well-being (changes in well-being)

Variable	Adjusted ¹		Adjusted ²		Adjusted ^{2b}		Adjusted ^{2c}	
	Beta (p-value)		Beta (p-value)		Beta (p-value)		Beta (p-value)	
Deprivation Status	Low Deprivation	High Deprivation	Low Deprivation	High Deprivation	Low Deprivation	High Deprivation	Low Deprivation	High Deprivation
Chatting (CH)	-0.01 (0.89)	-0.05 (0.41)	0.01 (0.83)	-0.06 (0.24)	0.01 (0.71)	-0.04 (0.41)	-0.03 (0.52)	-0.07 (0.28)
Structured Interaction (SI)	0.03 (0.83)	-0.01 (0.89)	0.08 (0.47)	-0.01 (0.89)	0.10 (0.35)	-0.00 (0.96)	0.11 (0.30)	0.01 (0.91)
Counselling (CO)	0.05 (0.30)	0.14 (0.38)	0.01 (0.78)	0.05 (0.72)	0.01 (0.85)	0.04 (0.77)	0.01 (0.84)	0.10 (0.61)
History Taking (HT)	0.04 (<0.01)	0.04 (<0.01)	0.01 (0.61)	0.00 (0.95)	0.01 (0.72)	0.00 (0.85)	0.02 (0.23)	0.00 (0.83)
Family Information (FI)	0.03 (0.32)	0.02 (0.69)	-0.03 (0.41)	-0.06 (0.10)	-0.01 (0.70)	-0.06 (0.11)	-0.02 (0.60)	-0.05 (0.17)
Treatment Effects (TE)	0.10 (0.08)	0.10 (0.21)	0.02 (0.62)	-0.03 (0.65)	-0.00 (0.95)	-0.04 (0.59)	0.02 (0.72)	-0.04 (0.61)
Health Knowledge (HK)	0.04 (0.62)	-0.08 (0.21)	-0.01 (0.84)	-0.06 (0.24)	0.03 (0.67)	-0.11 (<0.04)	0.06 (0.42)	-0.12 (<0.05)
Evaluation Feedback (EF)	-0.07 (0.19)	0.01 (0.88)	-0.02 (0.67)	0.04 (0.45)	-0.02 (0.64)	0.03 (0.61)	-0.01 (0.81)	0.04 (0.56)
Physical Examination (PE)	-0.05 (0.22)	-0.00 (0.93)	-0.01 (0.69)	0.06 (0.11)	-0.01 (0.67)	0.05 (0.20)	-0.01 (0.85)	0.06 (0.14)
Patient Question (PQ)	-0.01 (0.85)	0.06 (0.30)	-0.02 (0.68)	0.01 (0.85)	-0.04 (0.41)	0.02 (0.76)	-0.06 (0.33)	0.00 (0.97)
Compliance (CM)	-0.01 (0.87)	0.14 (0.11)	-0.05 (0.28)	-0.01 (0.85)	-0.09 (0.09)	-0.01 (0.93)	-0.09 (0.09)	0.00 (0.97)
Preventative Services (PS)	0.52 (0.24)	0.47 (0.38)	0.52 (0.16)	0.53 (0.24)	0.44 (0.23)	0.82 (0.07)	0.47 (0.20)	0.74 (<0.01)
Health Education (HE)	0.00 (0.99)	-0.06 (0.14)	0.00 (0.99)	-0.05 (0.16)	-0.01 (0.81)	-0.04 (0.26)	0.00 (0.90)	-0.04 (0.25)
Health Promotion (HP)	0.06 (0.58)	0.02 (0.79)	-0.08 (0.36)	-0.04 (0.47)	-0.04 (0.69)	-0.05 (0.42)	-0.00 (0.97)	-0.02 (0.76)
Planning Treatment (PT)	0.03 (0.25)	0.03 (0.31)	-0.00 (0.90)	0.02 (0.43)	-0.02 (0.46)	0.02 (0.45)	-0.01 (0.67)	0.03 (0.25)
Exercise (EX)	0.04 (0.63)	-0.10 (0.39)	-0.10 (0.26)	-0.06 (0.60)	-0.04 (0.59)	-0.03 (0.79)	-0.02 (0.78)	-0.05 (0.71)
Smoking (SM)	-0.19 (0.16)	0.01 (0.87)	-0.20 (0.19)	0.02 (0.76)	-0.06 (0.30)	-0.00 (0.97)	0.16 (0.30)	0.00 (0.96)
Nutrition (NU)	0.11 (0.29)	0.07 (0.26)	0.04 (0.67)	0.02 (0.67)	0.08 (0.37)	0.02 (0.78)	0.14 (0.14)	0.02 (0.68)
Substance Use (SU)	0.05 (0.72)	0.16 (0.06)	-0.03 (0.77)	0.07 (0.40)	-0.14 (0.23)	0.07 (0.38)	-0.13 (0.29)	0.06 (0.46)
Procedure (PR)	-0.05 (0.53)	-0.27 (<0.02)	-0.00 (0.99)	0.30 (<0.01)	-0.00 (0.97)	-0.28 (<0.01)	-0.03 (0.60)	-0.27 (<0.01)
Additional Codes:								
Blood Pressure (BP)	-0.07 (0.31)	-0.08 (0.27)	-0.03 (0.56)	-0.01 (0.92)	-0.01 (0.83)	-0.04 (0.56)	-0.02 (0.79)	-0.06 (0.41)
Cholesterol (Chlstrl)	0.23 (0.25)	-0.05 (0.70)	0.02 (0.89)	-0.08 (0.43)	0.08 (0.64)	-0.09 (0.34)	0.10 (0.54)	-0.08 (0.46)
Weight (Wght)	0.03 (0.68)	-0.10 (0.29)	-0.02 (0.69)	-0.23 (<0.01)	-0.02 (0.73)	-0.26 (<0.01)	-0.02 (0.74)	-0.28 (<0.01)
Fit Note/Sick Line (DOC Line)	0.21 (<0.01)	0.04 (0.66)	0.08 (0.19)	-0.04 (0.74)	0.06 (0.31)	-0.03 (0.74)	0.09 (0.14)	-0.02 (0.90)
Computer Entry (COMP Ent)	0.17 (<0.01)	0.10 (0.09)	0.11 (<0.03)	0.11 (<0.03)	0.09 (0.07)	0.08 (0.13)	0.07 (0.30)	0.08 (0.14)

Standardized Coefficients Beta, p values

Adjustments estimates using linear regression with robust standard errors and:

¹ Adjustment for baseline MYMOP (well-being), age and gender

² Adjustment for baseline MYMOP (well-being), age, gender, multiple morbidity (MM), PHQ-9 and Anxiety

^{2b} Adjustment for baseline MYMOP (well-being), age, gender, rating of health in part year (12 months), PHQ-9 and Anxiety

^{2c} Adjustment for baseline MYMOP (well-being), age, gender, rating of health in part year (12 months), duration of symptoms, PHQ-9 and Anxiety

9.14 Analysis of key confounders; Self-Management & Anticipatory Care

The associations between combination codes for Self-Management Support and Anticipatory Care and changes in well-being were compared taking into account a list of potential confounding variables.

Table 40: Analysis of confounders considered for each Davis and empathy combined codes; Self-Management Support & Anticipatory Care and changes in well-being.

Variable	Adjusted ¹		Adjusted ²		Adjusted ^{2b}		Adjusted ^{2c}	
	Beta (p-value)		Beta (p-value)		Beta (p-value)		Beta (p-value)	
Deprivation Status	Low Deprivation	High Deprivation	Low Deprivation	High Deprivation	Low Deprivation	High Deprivation	Low Deprivation	High Deprivation
Self-Management Support	0.01 (0.55)	0.00 (0.99)	-0.00 (0.75)	-0.02 (0.16)	-0.01 (0.50)	-0.03 (0.14)	-0.00 (0.79)	-0.03 (0.18)
Anticipatory Care	0.08 (0.42)	0.03 (0.71)	-0.05 (0.57)	-0.04 (0.57)	-0.10 (0.90)	-0.03 (0.57)	0.03 (0.78)	-0.00 (0.96)

Standardized Coefficients Beta, p values

Adjustments estimates using linear regression with robust standard errors and:

¹ Adjustment for baseline MYMOP (severity), age and gender

² Adjustment for baseline MYMOP (severity), age, gender, multiple morbidity (MM), PHQ-9 and Anxiety

^{2b} Adjustment for baseline MYMOP (severity), age, gender, rating of health in past year (12 months), PHQ-9 and Anxiety

^{2c} Adjustment for baseline MYMOP (severity), age, gender, rating of health in past year (12 months), duration of symptoms, PHQ-9 and Anxiety

There were no statistically significant associations found between changes in well-being and Self-Management Support or Anticipatory Care combination codes in the high and low deprivation groups when the confounding variables were taken into account (Table 40).

9.15 Summary of Findings

This analysis aimed to explore the associations of Self-Management Support (including Anticipatory Care) on patient enablement and changes in symptoms severity and well-being in high and low deprivation areas.

Patient Enablement

The findings show that patient enablement was associated with only two Davis codes within the low deprivation group, namely Patient Questions and Procedures. There were no associations recorded in the high deprivation group.

The association found between patient enablement and Patient Questions remained statistically significant when the confounding variables were taken into account. However, the association with Procedures were no longer statically significant when the patient's multiple morbidity status, reported PHQ-9 and anxiety scores and the patient's rating of their health in the past 12 months were taken into account.

Change in symptom severity

In the low deprivation group Chatting, discussion on Compliance, Blood Pressure and the amount of Computer Entry undertaken within the consultations were positively associated with changes in symptom severity. In the high deprivation group History Taking, Evaluation Feedback, Health Education and discussions on Exercise and Substance Use were associated with a positive change i.e. reduction in symptom severity. The results found for Blood Pressure and Computer Entry and the codes relating to Self-Management Support remained statistically significant when the confounding variables were taken into account. However, the rest of the Davis codes were no longer statistically significant when the confounding variables were taken into account.

Change in well-being

In the low deprivation group Counselling and Doctor's Line within the consultations were associated with changes in well-being. In the high deprivation group Compliance, Planning Treatment and Substance Use were also associated with changes in well-being. In both the high and low deprivation group History Taking was associated with changes in well-being. There were no associations found between Self-Management Support and Anticipatory Care

and changes in well-being. Therefore there were no positive effects recorded between patient well-being and individual Davis codes or Self- Management Support and Anticipatory Care.

The association between Davis codes; History Taking and Doctor Line and changes in well-being were no longer statistically significant when the confounding variables; patient's multiple morbidity status, PHQ-9 and anxiety scores, the rating of their health in the past 12 months and the duration of their symptoms were taken into account. Counselling, Compliance, Planning Treatment and Substance Use were no longer statistically significant when all the confounding variables were taken into account.

9.16 Discussion

This chapter presents an analysis of the Davis codes recorded within Chapter 7 alongside the high and low deprivations group's patient enablement (PEI) scores. The analysis explores the effects of Self-Management Support (including Anticipatory Care) on patient enablement and changes in symptoms severity and well-being in high and low deprivation groups.

The findings show that within groups of high and low deprivation very few individual Davis codes were associated with patient enablement, or changes in symptoms severity or changes in well-being. These findings suggest that neither patient enablement nor patient outcomes measures are associated with discussions in the consultation relating to Self-Management Support in groups of high or low deprivation. However, the findings did show that there was an association between patient outcome measures and Anticipatory Care. This association was no longer statistically significant when the confounding variables such as the patient's multiple morbidity and mental health status as well as the patient ratings of their health in the past 12 months and the duration of the symptoms reported were taken into account.

Patient enablement is the patients' ability to understand and cope with their problem/illness after seeing the doctor, and the degree to which they feel able to cope with life, keep themselves healthy, feel confident about their health and help themselves (Mead et al. 2008). In the high deprivation groups the results showed an association between enablement and asking questions and undergoing preventative procedures. Patients within the high deprivation groups from previous results (chapter 8) also tended to reported more multiple morbidity and chronic illness, which within the literature has been associated with lower

patient enablement (Mead et al. 2008). Enablement was associated with patients' self-reported general health over the last 12 months; patients with poorer long-term health reported less enablement within the consultation. This implies that within deprived groups, enablement like self-reported general health tends to be lower. These findings are supported by the current results that showed the low deprivation group to report poorer general health in the past 12 months and higher levels of anxiety (chapter 7).

Other literature has suggested that there may be a relationship between enablement and the concept of self-efficacy. This idea suggests that by improving self-efficacy in patients with longstanding illness can be of benefit (Mead et al. 2002; Bandura 1977). This idea could relate to the Self-Management strategies being discussed within the consultation. However the current findings showed no positive association between enablement scores and Self-Management Support in either the high or low deprivation groups. In terms of the health outcomes the low deprivation group positively associated health outcomes with History Taking and Counselling within the consultations. These results support the findings on consultation factors within the literature that have been positively associated with patient enablement therefore the doctor's interpersonal communication skills and how much they take an interest in the patient's life is related to patient enablement (Pawlikowska et al. 2010).

Chapter 10: Methodology; the learning, coding and Inter-Rater Reliability process for the Verona-CoDES-CC

10.1 Summary

The Verona Coding definitions of Emotional Sequences for Cues and Concerns (Verona-CoDES-CC) (Del Piccolo et al. 2009), examine patient communication in terms of the presence of emotional Cues and Concerns the patient raises within the consultation. This chapter outlines the methodology and inter-rater reliability work undertaken with the Verona coding system.

The inter-rater reliability work within this chapter was undertaken on 20 transcribed consultations across 2 cycles of coding. Overall the codes (JMM and MH) achieved an excellent inter-rater reliability score for Cues, Concerns (0.95 respectively) and Health Provider Responses (0.91). The inter-rater reliability measures that were applied to the coded consultations were also compared in terms of the patient group's CARE and deprivation status. The results of the inter-rater reliability work showed that when compared to previous studies using the Verona coding system the results were above average

The results section of this work on 112 consultations can be found in Chapter 11.

10.2 Data

The Verona coding sequence was used to measure the number of emotional Cues and Concerns as well as Health Provider Responses that were present within a sample of videoed consultations. As stated in the context chapter (chapter 4) the videoed consultations were collected within the previous study (Mercer et al. 2012).

Subsets of the videoed consultations are reviewed within this chapter. This subset of consultations was then transcribed and coded using the Verona coding system. First, the

cycles of learning the coding system are outlined. This is followed by the work undertaken within each cycle to examine the levels of inter-rater reliability that were achieved. More details about the Verona data in the context of the previous study can be found in Appendix L.

10.3 Inter-Rater Reliability cycles and results

The results within this chapter look at the cycles of inter-rater reliability calculations that were undertaken using both Cohen's Kappa and the Davis method of inter-rater reliability as outlined by Callahan et al (Callahan and Bertakis 1991). The inter-rater reliability (IRR) results showed that there was a high IRR score maintained across the 2 cycles of coded data.

10.4 Theoretical background of Verona

The Verona Coding sequence of Emotional Sequences for Cues and Concerns (Verona-CoDES-CC) (Del Piccolo et al. 2009) is a newly developed coding system for patient expressions of Cues and Concerns within medical consultations. The Verona system categorises the patient's emotional Cues, Concerns and the Health Provider's Responses providing a systematic approach to evaluate the communication about emotional issues that has occurred within the consultation setting.

The Verona system defines a 'cue' as 'a verbal or non-verbal' hint that allows the patient to suggest an underlying unpleasant emotion that may not be completely clear and may require a response from the healthcare provider in order to clarify (Zimmermann et al. 2011).

'Concerns' refer to 'clear and unambiguous' expressions of unpleasant emotion, which have occurred recently or are currently being felt that are explicitly said by the patient. Cues and Concerns provide health care professionals with valuable information that allow them to recognize and explore information that may otherwise have been missed or go undetected in medical consultations (Zimmermann et al. 2011; Del Piccolo et al. 2009; Zimmermann et al. 2007).

The Verona coding system also acknowledges that Cues can come in the form of neutral expressions. An example of this type of cue are words or phrases that stand out from the

narrative background or refer to stressful life events and conditions (Del Piccolo et al. 2009). These Cues can also be seen through patient elicited repetition of previously used neutral expressions.

Cues can also be elicited in a non-verbal form, and the Verona coding system accommodates these occurrences. The system states that clear expressions of negative or unpleasant emotions such as crying or hidden emotions in the form of silence, frowning and avoidance of answering questions presented by patient to the health provider (Del Piccolo et al. 2009) can be observed and noted within the transcription and coded thereafter accordingly. This is possible within the current data set as the consultations were videoed and non-verbal expressions can be viewed by the transcribers and noted within the consultation transcription, or by the coder directly from the videoed consultation.

Within the Verona-CoDES-CC system, the Cues subcategories are seen in Table 41.

Table 41: Verona-CoDES-CC system Cues Summary table

Cue A	Words or phrases in which the patient uses vague or unspecified words to describe his/her emotions
Cue B	Verbal hints to hidden Concerns (emphasizing, unusual words, unusual description of symptoms, profanities, metaphors, ambiguous words, double negatives, exclamations, expressions of uncertainties and of hope regarding stated problems).
Cue C	Words or phrases which emphasise (verbally or non-verbally) physiological or cognitive correlates (regarding sleep, appetite, physical energy, concentration, excitement or motor slowing down, sexual desire) of unpleasant emotional states.
Cue D	Neutral words or phrases that mention issues of potential emotional importance which stand out from the narrative background and refer to stressful life events and conditions.
Cue E	A patient elicited repetition of a previous neutral expression (repetition of a neutral expression within a same turn is not included).
Cue F	Non-verbal expressions of emotion
Cue G	Clear expression of an unpleasant emotion, which occurred in the past (more than one month ago) or is without time frame.

The Verona system also codes Concerns; this code does not have any subcategories. Concerns are defined as clear and unambiguous expressions of an unpleasant current or recent emotion where the emotion is explicitly verbalized i.e. I am worried/ I am upset.

The Verona-CoDES-CC system also provides an outline in which to code the Health Provider Responses. Within the current study, these will be the General Practitioner’s (GP’s) responses. These codes follow a strict procedure where after each Cue and Concern the Health Provider’s next statement is coded as their response.

The Health Provider’s units of analysis that can be coded include immediate and delayed responses. Provider responses which do not follow a patient Cue or Concern and do not specifically relate to a Cue or Concern are not coded. Delayed responses are only coded when the immediate response provided by the Health Provider acted only to allow the patient to finish their part of the communication process i.e. was subject to the flow of natural conversation patterns.

The health provider coding options are shown in Figure 22.

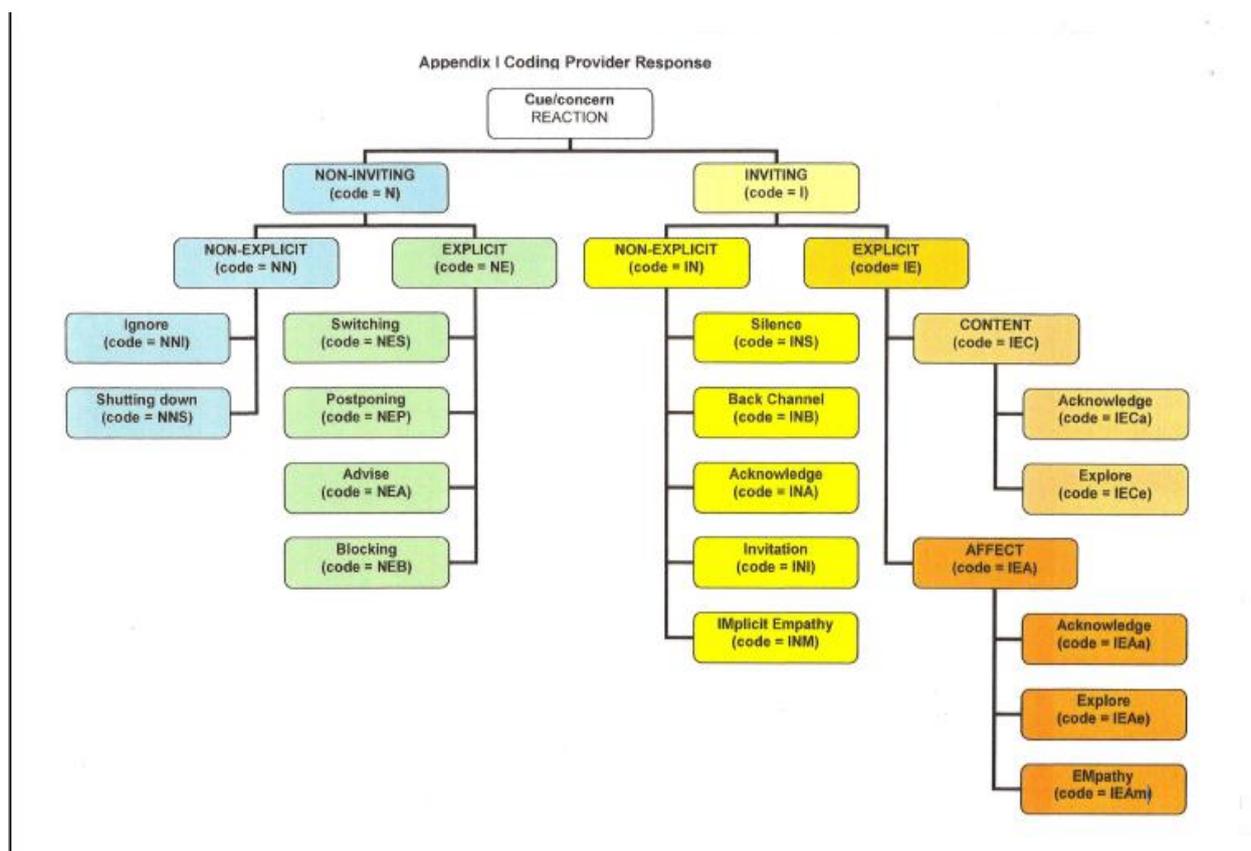


Figure 22: Verona-CoDES-CC, Coding Provider Responses (Del Piccolo et al. 2009)

The first dimension breaks the provider responses into two categories; Inviting and Non-Inviting. The second dimension combines the first two categories with the second dimension explicit and non-explicit which creates FOUR categories of response, each of which has been given a colour code.

- Non-Inviting Non-Explicit (NN)
- Non-Inviting Explicit (NE)
- Inviting Non-Explicit (IN)
- Inviting Explicit (IE)

The four dimensions then create branches of coding options (level 3) that give code examples of Health Provider Responses within each of the four main dimensions.

10.5 Inter-Rater Reliability overview

The Verona Coding process was explained to coders 1, the author of the thesis (JMM) and coder 2 Maria Higgins (MH), Research Assistant at the University of Glasgow by Professor Gerry Humphris (GH) (an originator of the system from St Andrew's University) to allow the coders to learn how to use the coding scheme. All 3 coders (Professor Humphris being the third coder who provided the expert decision on codes during the learning process) worked through the coding manuals to gain an understanding of its use on a few example transcripts. This involved 2 meetings with GH, 2 phone calls and 2 emails. This work took place during September 2009 and October 2009.

Thereafter, the three coders completed 6 extra transcripts separately and came together at a later date to compare their results and talk through any new coding problems or queries that had arisen during the practical use of the Verona system. This process took place over 4 meetings between JMM, MH & GH between October 2009 and January 2010.

Once all parties were satisfied that their grasp of the Verona system was to a reasonable standard, the selection process began to look at transcripts to work towards an IRR score for coders 1 and 2.

10.6 Inter-Rater Reliability; Sampling Method

The data set was divided into GPs who had high, medium and low CARE measure scores (i.e. GPs who had been perceived by the patients as having high, average or low empathy) on the basis of GP mean CARE measure scores (above 95% Confidence Interval classified as high, below 95% Confidence Interval classified as low). From this sample of GPs, patients were selected who reported attending their GP with physical complaints only, as it was felt that those patients who consulted with mental health problems would be likely to express a higher number of emotional Concerns and thus give fewer opportunities to detect the more subtle emotional Cues.

The sample of patients who were selected across the three CARE measure groups were chosen in an attempt to match patients in terms of range of age, gender and continuity of care (i.e. how well the patient reported knowing their doctor).

10.7 Inter-Rater Reliability; Data Set 1

Cues and Concerns of the 12 consultations (Data Set 1) that were coded were measured to determine the inter-rater reliability (IRR) between coders 1 (JMM) and 2 (MH). IRR measures can be found within the methodology chapter (chapter 5).

Sample Characteristics

A sample of 12 patients consulting 12 different GPs (from 6 practices) were purposively selected (Data set 1). This number consists of 6 male and female patients respectively, of which 4 patients were from low and 8 patients from high deprivation scored practices (Figure 23). More detail on all the participating practices can be found in the ‘context’ chapter (Chapter 4). Within each of the CARE status categories, 4 patients were represented within the three options; high, mid and low CARE.

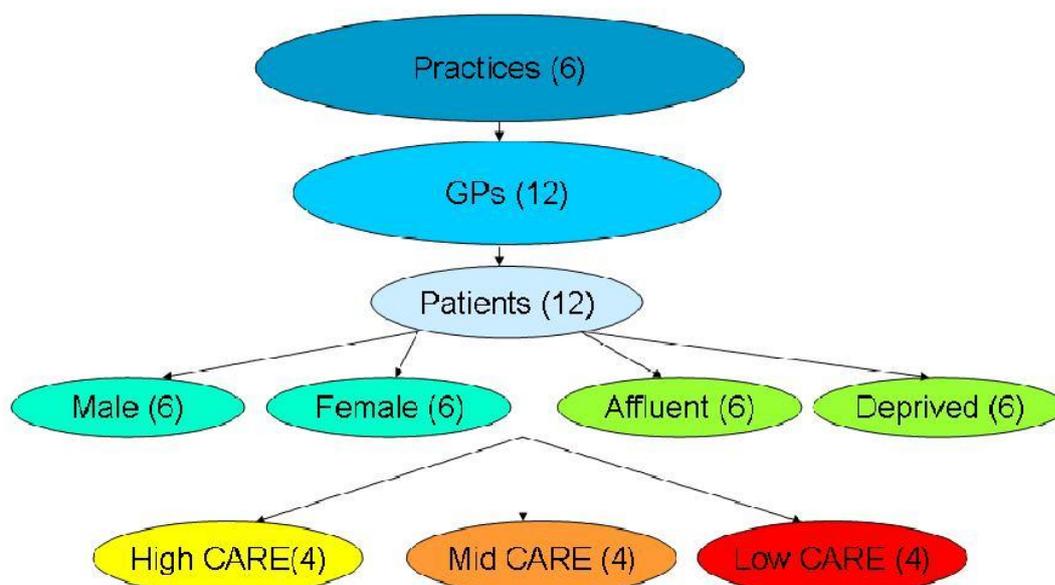


Figure 23: Flow diagram of data set 1

Inter-rater reliability (IRR) was calculated using Cohen’s Kappa (Callahan and Bertakis 1991) and the Callahan et al (Callahan and Bertakis 1991). More details about the IRR measures can be found within the Methodology chapter (chapter 5).

Sample Results

The results in Table 42 show a high IRR was achieved overall within the three CARE measure groups for both Cues and Concerns. This high IRR result was achieved using both Cohen’s Kappa (Cohen 1960) and the Callahan method (Callahan and Bertakis 1991).

Table 42: IRR for Cues and Concerns by CARE measure groups (data set 1).

	Cues*		Concerns*	
	Cohen’s	Davis	Cohen’s	Davis
ALL	0.95 (122)	0.92 (122)	1.00 (3)	1.00 (3)
High CARE	0.96 (47)	0.94 (47)	0 (0)	0 (0)
Mid CARE	0.94 (53)	0.89 (53)	1.00 (3)	1.00 (3)
Low CARE	0.97 (22)	0.96(22)	0 (0)	0 (0)

* Numbers in brackets show counts

The sample of 12 consultations was also reviewed to determine any differences between the high and low deprivation groups.

Data set 1 represented 8 high deprivation and 4 low deprivation patients. The original sample criteria accounts for the patient's age, gender and continuity of care; this unfortunately has resulted in more high deprivation than low deprivation patients being represented within data set 1. When accounting for the patient's deprivation status IRR was maintained at a high level (Table 43).

Table 43: IRR of physical complaints Cues and Concerns in high and low deprivation groups for data set 1

	Cues *		Concerns *	
	Cohen's	Davis	Cohen's	Davis
ALL	0.95 (122)	0.92 (122)	1.00 (3)	1.00 (3)
Low Deprivation	0.89(27)	0.82 (27)	1.00(2)	1.00 (2)
High Deprivation	0.97(95)	0.95 (95)	1.00(1)	1.00 (1)

* Numbers in brackets show counts

The results in Table 44 show a good inter-rater reliability between coder 1 and coder 2 was achieved within both IRR measures for Health Provider Responses, between the high and low deprivation groups as well as across the three CARE measure groups.

Table 44: IRR of Health Provider Responses in high and low deprivation groups accounting for CARE measure scores (data set 1).

	Health Provider Responses *	
	Cohen's	Davis
ALL	0.94 (123)	0.89 (123)
Low Deprivation	0.94(27)	0.89(27)
High Deprivation	0.93(96)	0.89 (96)
High CARE	0.96(46)	0.94(46)
Mid CARE	0.91(55)	0.84(55)
Low CARE	0.95(22)	0.91(22)

* Numbers in brackets show counts

Although good IRR scores was achieved for the high and low deprivation groups, further IRR work was carried out to include a more even division of patients within both categories. This attempt to get a larger more evenly distributed sample of data was considered to be the best course of action to ensure that the conclusions drawn from the IRR results were correct (Table 44).

10.8 Inter-Rater Reliability; Data Set 2

The Verona Coding process was revisited in June and July 2010 by both coders 1 (JMM) and 2 (MH) to confirm and improve on the inter-rater reliability (IRR) that was previously established. The coders decided that mid CARE consultations in particular would be beneficial to add to the data set.

The idea of selecting mid CARE category consultations was based on previous coding experiences. The mid CARE consultations were found to contain more opportunity for error and this was reinforced by the slightly reduced inter-rater reliability that was achieved within this section of the data set (Tables 41 & 42).

Coders 1 and 2 visited Professor Gerry Humphris to re-establish that good coding practice was being maintained. This meeting also provided an opportunity to ask questions that had arisen with the experience of coding the previous group of consultations and to discuss our plans to use the coding system for a new set of consultations with the aim to improve on the inter-rater reliability. Once all coders felt confident to undertake more coding another 8 consultations were selected and coded. The additional 8 consultations (data set 2) brought the total number of consultations to 20.

Sample Characteristics

Data set 2's addition of 8 mid CARE scored consultations followed the same inter-rater reliability process as seen within data set 1. As before the 8 consultation were matched on the basis that all the patients had attended their GP with a physical complaint. This group of consultations however, included patients who represented the mid CARE score category.

The additional 8 mid CARE scored consultations (data set 2) represented 3 consultations from the high deprivation and 5 consultations from the low deprivation group (Figure 24). These groups provided 4 male and female patients respectively. Reliability measured can be seen in more details within the methodology chapter (Chapter 5).

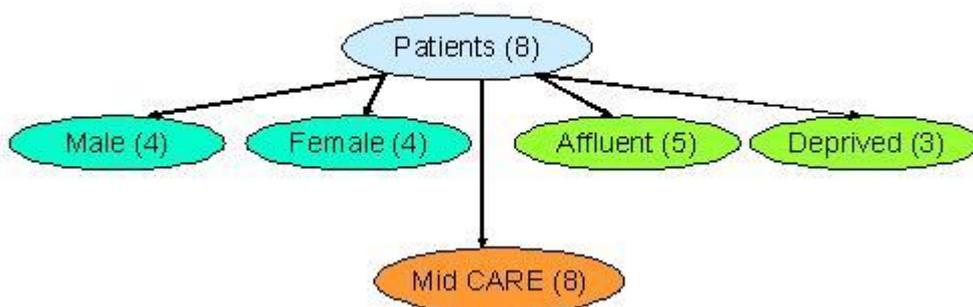


Figure 24: Flow Diagram of data set 2

Sample Results

The results in Table 45 show that a good IRR was achieved for both Cues and Concerns (Data set 2). All consultations represented mid CARE consultations.

Table 45: IRR of Cues and Concerns within mid CARE consultations (data set 2).

	Cues *		Concerns *	
	Cohen's	Davis	Cohen's	Davis
ALL	0.95 (56)	0.91 (56)	0.92 (7)	0.86(7)

* Numbers in brackets show counts

The 8 consultations were revisited to compare the high deprivation and low deprivation groups.

Table 46: IRR for Cues and Concerns across areas by deprivation status (data set 2)

	Cues *		Concerns *	
	Cohen's	Davis	Cohen's	Davis
ALL	0.95 (56)	0.91 (56)	0.92 (7)	0.86(7)
Low Deprivation	0.95(45)	0.91 (45)	1.00(4)	0 (4)
High Deprivation	0.95(11)	0.90 (11)	0.80(3)	0 (3)

* Numbers in brackets show counts

Table 46 shows that overall a good inter-rater reliability was recorded for both Cues and Concerns within the high and low deprivation groups. There was some notable difference within the IRR results between Cohen's Kappa and the Davis method. The discrepancies may be explained by the low number of Concerns recorded within this category.

Data set 2 inter-rater reliability was measured to account for Health Provider Responses.

Table 47: IRR of health provider response within the mid CARE group across the high and low deprivation groups (data set 2).

	Health Provider Responses	
	Cohen's *	Davis *
ALL	0.86 (67)	0.76 (67)
Low Deprivation	0.84(54)	0.74 (54)
High Deprivation	0.91(13)	0.85(13)
CARE status	0.86(67)	0.76 (67)

* Numbers in brackets show counts

The results in Table 47 show a good agreement between coder 1 and 2 across all health provider response. This result was slightly less however than what was achieved in data set 1. This variance in IRR score may be explained by the reduction in the number of Cues and Concerns that occurred within this set of data (Data set 1; 122 Cues and 3 Concerns; Data set 2; 56 Cues and 7 Concerns) as well as the fact that there had been a gap of a month between measuring the Data Set 1 and 2's inter-rater reliability. This gap was due to other coding work being carried out on the Davis coding system.

There was also good agreement between coder 1 and 2 in the mid CARE status consultations within the high and low deprivation groups.

10.9 Inter-Rater Reliability in previous Verona Literature

A comparison of the Verona Coding inter-rater reliability rates within the current data set and three Verona journals was undertaken (Oguchi et al. 2010; Eide et al. 2011; Zimmermann et al. 2011). The results showed that the average IRR for Cues was 0.60 (range 0.51-0.70), Concerns was 0.60 (range 0.51-0.70) and for Health Provider Responses was 0.67 (range 0.48-0.70). Therefore, the current inter-rater reliability scores are above average with Cues and Concerns (0.95) as well as Health Provider Responses (0.91) all scoring excellent inter-rater reliability scores according to Cohen's Kappa (Cohen 1960).

The comparison with current literature on Verona also showed that inter-rater reliability tended to be coded on the total number of codes or up to levels 1 and 2 (Vatne et al. 2010; Del Piccolo et al. 2004; Zimmermann et al. 2011; Eide et al. 2011; Del Piccolo et al. 2009). The current inter- and intra-rater reliability scores that have been calculated in this chapter take into account all the Verona coding system options, and thus give a much more detailed and accurate account of the levels of IRR achieved.

10.10 Conclusions

The Verona Coding definitions of Emotional Sequences for Cues and Concerns (Verona-CoDES-CC) (Del Piccolo et al. 2009) provide a relatively new system of coding patient expressions of Cues and Concerns within medical consultations.

The Verona Coding system has been used within the current data sets to view the number of Cues and Concerns as well as Health Provider Responses present within a sub section of the videoed primary care consultations. In all the selected videos the health provider was a GP. Overall the work with the Verona Coding system across all 3 data sets provided the opportunity for the 2 new coders to improve on their understanding of the Verona system and its use within the consultations selected. The work that was carried provided a knowledge

base that was then built on when the process was revisited in June and July 2010 to improve on the previously achieved results.

The data also showed (data sets 1 and 2) that a good inter-rater reliability was achieved by coders 1 and 2 across Cues and Concerns as well as Health Provider Responses. This was true of both the low and high deprivation groups and across all 3 CARE measure categories.

There was some variation noted within data set 2 for the Concerns data. This was due to the low number of Concerns that were coded within the data and the fact that all consultations within this data set were mid CARE which had been established as the CARE measure group that proved the most challenging. The high and low CARE measure group consultation provided extremes of the numbers and types of Cues and Concerns whereas the mid CARE consultations at times were not always as straightforward to code. Therefore the study did not involve the mid CARE group.

There is scope for more work on the IRR with the Verona coding system that could be carried out on consultations that had other complaints such as social, emotional and psychological which may highlight different patterns in the numbers of Cues and Concerns as well as types of Health Provider Responses that could provide a comparison to the data collected on the physical complaint category. However, the rationale for focusing on consultations about physical problems was that such consultations would have fewer emotional Concerns (which are straightforward to identify and only require a single code) but would have emotional Cues, which are harder to identify and have several coding categories. By gaining high IRR on these patients, it is assumed that equally high or higher IRRs would be obtained on patients presenting with emotional problems.

Chapter 11: Verona-CoDES-CC; the emotional cues and responses in general practice consultations in areas of high and low deprivation

11.1 Summary

This study assesses the nature, type, and frequency of emotional Cues and responses by GPs in 112 videoed consultations involving 8 general practitioners, selected to provide maximum contrasts in socio-economic status and patients' perceptions of GP empathy. To the author's knowledge, this is the first time that the Verona coding system has been used comparing consultations by GPs with high and low CARE scores (Mercer et al. 2004) in low and high deprivation groups.

The results confirm findings from previous studies of consultations with patients with specific conditions that Cues occur more frequently than Concerns and that Health Provider Responses within the clinical setting tend to be Inviting (I) by nature. The key new finding of the current study is that in areas of severe socio-economic deprivation, consultations with practitioners with high patient ratings of empathy (high CARE measure scores) have more emotional Cues, Concerns and encouraging Health Provider Responses, compared with consultations with practitioners with low patient ratings of empathy. These associations between Verona codes and GP CARE scores were not observed in consultations in low deprivation areas.

11.2 Introduction

The Verona system of coding definitions of emotional sequences for Cues and Concerns was introduced and partly described in Chapter 8.

This chapter describes the Verona system in more detail. It then describes how the 112 GP consultations were selected for study, comparing consultations with high and low patient

ratings of practitioner empathy (CARE scores) in practices serving high and low deprivation patient groups.

The Verona system is then used to characterise the consultations in terms of the Cues, Concerns and GP responses which were observed. The statistical analysis then describes the associations of Cues; Concerns and GP responses with high and low CARE scores in consultations which took place in high and low deprivation patient groups.

Verona use in previous studies

The Verona-CoDES-CC (Del Piccolo et al. 2009) system has featured in a number of medical consultation communication studies. Five of these studies are mentioned below.

Eide et al's (Eide et al. 2011) study of pain management and nurse's communication featured the Verona coding system. The study involved 12 videoed consultations that compared the agreement between the researcher and the patient in identifying Cues and Concerns elicited (patient directed approach versus researcher directed approach) within the consultations. The aim of this research was to measure how useful the Verona coding system was in accurately identifying patient Cues and Concerns. The study concluded that the Verona system captures patient's real Concerns.

Oguchi et al (Oguchi et al. 2010) measured the impact of nurse and patient communication using the Verona coding system as part of chemotherapy education consultations. 51 cancer patients and 13 nurses were recruited. The study grouped the Verona codes into Provided Space (PS) and Reducing Space (RS) responses i.e. Health Provider Responses that encourage or discourage further disclosure of emotional expression. Their findings found that health providers tended to provide space for patient's to disclose information.

Verona was also used in paediatric oncology (Vatne et al. 2010) This study used 28 participants. Vatne et al's study found children consult using a similar style of communication as adults. Non-verbal communication was an important indicator of emotional concern, especially facial expression and negative emotions were coded more frequently than positive emotions.

Verona was also used with 58 fibromyalgia patients (Eide et al. 2011). Eide et al's (Eide et al. 2011) work added that more concerns were expressed by patients when nurses exhibited a high level of empathic responding and when the patient entered the consultation with a higher level of negative affect (Eide et al. 2011).

Finally, Zimmerman et al (Zimmermann et al. 2011) examined the use of Verona in coding patient expressions of emotional distress in psychiatric consultations. The study involved 20 psychiatric consultations and concluded that Verona can facilitate comparative research on provider-patient communication sequences in which patients express emotional distress. The study found there was a strong association between the number of concerns patients report and psychological stress.

To the author's knowledge, there have been no previous studies using Verona codes in which patients have been selected for study not on the basis of having a specific condition, but on the basis of consulting practitioners with high and low levels of patient ratings of practitioner empathy in previous consultations. The present study is also the first to apply Verona codes in consultations taking place in areas of contrasting socio-economic deprivation.

11.3 Recap of the Verona-CoDES-CC

This further description of the Verona-CoDES-CC provides an overview of the coding options and their meanings as outlined by the Verona manual. Also provided are some examples, taken from the transcribed consultations that illustrate Cues, Concerns and Health Provider Responses within consultations.

Figure 25 shows the manual's definition of what a Cue, Concern and Health Provider Response are within the patient-practitioner encounter. The meanings of individual Cues A to G are also defined as well as the differences between Inviting, Non-Inviting, Explicit and Non-Explicit Health Provider Responses.

Verona Code		Description			
'Cue'		A verbal or non verbal' hint that allows the patient to suggest an underlying unpleasant emotion	Health Provider Responses		The Health Provider's (GPs) response to the cue/concern.
'Concern'		Refers to 'clear and unambiguous' expressions of unpleasant emotion, which have occurred recently or are currently being felt that are explicitly said by the patient.			
Cue	A	Words or phrases which are vague or unspecific that are used to describe the patient's emotions	Inviting	I	Any response which gives space for further disclosure
	B	Verbal hints to hidden concerns (emphasizing, profanities, metaphors etc).	Non-Inviting	N	Any response which reduces the space for further disclosure about the specific cue/concern
	C	Words or phrases which emphasise (verbally or non-verbally) physiological or cognitive correlates of unpleasant emotional states.	Explicit		Any response which refers to or specifically mentions either the content/topic or emotion in the cue/concern.
	D	Neutral words or phrases that mention issues of potential emotional importance which may refer to stressful life events and conditions.	Non-Explicit		Any response which does not explicitly refer to either the content or the emotion of the cue/concern.
	E	A patient elicited repetition of a previous neutral expression			
	F	Non verbal expressions of emotion			
	G	Clear expression of an unpleasant emotion, which occurred in the past (more than one month ago) or is without time frame.			

Figure 25: Descriptions of Verona Cues and Concerns

An example of Cue B (verbal hints to hidden Concerns) can be seen within this quote:

Patient: *“aye I missed a couple of days because I started bloody (patient gestures drinking), right and eh my eyes went all red and I felt kind’eh”* (GP 14 Cons 2).

In this example the patient hints that their lack of compliance has been the result of alcohol consumption. The term alcohol is only hinted at through profanities and vague words within the consultation, which are then reinforced by non-verbal gestures (Cue F).

The use of Cue D (neutral words or phrases that mention issues of potential emotional importance) is seen within this quote:

Patient: *“yes and obviously I am reacting kind of bizarrely to infections at the moment (patient gestures to self)”* (GP 43 Cons 11).

In this example the patient hints to Concerns on his/her general health, but does not directly say that he/she is concerned. The patient alludes to poor general health being the problem that is affecting their current complaint.

Cue F (non-verbal expressions of emotion) is illustrated as follows:

Patient: *“he has written in this letter, about you, that you can walk 20 yards, and you said that, I never said that (patient shakes head) I honestly didn’t say that”* (GP22 Cons 9).

Cue F often acts to facilitate the verbal hint that the patient has provided when explaining their symptoms. The example above hints at the patient’s unhappiness at their current treatment. Words may also be reinforced by non-verbal gestures to reiterate a point.

An example of a patient elicited Concern can be seen within this quote;

Patient: *“even to empty the dishwasher I am shocked I am never like that”* (GP28C8)

This patient verbalizes their Concern by the use of the term ‘shocked’ to show the Concern the patient has that his/her symptoms are affecting daily activities.

Figures 26 and 27 describe the definitions and meanings of Non-Inviting Health and Inviting Health Provider Responses, respectively.

Verona Code		Description			
Non-Inviting Non-Explicit Ignore	NNI <i>Example</i>	Any response that appears to ignore and takes no account of both the content and emotions of the cue/concern. <i>P: I am worried about Friday's operation</i> <i>D: OK, are you still on antibiotics?</i>	Non-Inviting Explicit Postponing	NEP <i>Example</i>	Any explicit response that delays the further exploration of the cue/concern. <i>P: I am worried about Friday's operation</i> <i>D: We'll talk about that in a minute, but first...</i>
Non-Inviting Non-Explicit Shutting Down	NNS <i>Example</i>	Any response which shuts down or moves away from the patients cue/concern without reference to it. <i>D: No no...let's move on then</i>	Non-Inviting Explicit Advise/Reassure	NEA <i>Example</i>	Any explicit response gives information and or advice/reassurance but does not invite further disclosure. <i>P: I am worried about Friday's operation</i> <i>D: Don't worry! Everything will be alright.</i>
Non-Inviting Explicit Switching	NES <i>Example</i>	Any response that shuts down or changes the frame of reference of the cue/concern. Content/Emotion of cue or concern MUST be referred to. <i>P: I am worried about Friday's operation</i> <i>D: How does your husband feel about it?</i>	Non-Inviting Explicit Blocking	NEB <i>Example</i>	Any explicit response that is a refusal of the HP to talk further about the cue/concern. Accompanied by a devaluation or disconfirmation of what the patient said. <i>P: I am worried about Friday's operation</i> <i>D: No no. Worrying doesn't do you any good?</i>

Figure 26: Descriptions of Verona Non-Inviting Health Provider Responses

The Health Provider Response Non Inviting Non-Explicit Ignore (NNI) is seen within this quote:

Patient: “because at night, overnight it is on drainage eh? (Patient refers to catheter)”

Doctor: “yeah so see how you get on and come back okay?” (GP 18 Cons 6).

This response shows the health provider, in this case a GP, deciding that the patient’s Concerns can be discussed at a later time.

Health Provider Response Non Inviting Explicit Switching (NES) refers to any response that shuts down or changes the frame of reference of the Cue/Concern. For example;

Patient: “now listen I want to ask you, you know but I don’t want to be a pest to you but any chance of getting that eh.: (GP uses computer) pusher I will buy it quick as n’to pay for it doctor”.

Doctor: “when we spoke the last time did I no get the physio to come and see you for a chat?” (GP 14 Cons 1).

In this case, the health provider moves the responsibility of responding to the Cue or Concern to a third party.

Verona Code		Description			
Inviting Non-Explicit Silence	INS	When the HP leaves space for the patient to say more. The 'space'/silence must be 3 seconds or more.	Inviting Explicit Content Acknowledge	IECa	Any response that elaborates on Inviting Explicit Content (IEC)
Inviting Non-Explicit Back Channel	INB <i>Example</i>	Any response that provides space for the patient to say more through minimal prompting. <i>D: Mmmm, Yes, Uhuh, Right, Okay</i>	Inviting Explicit Content Explore	IECe	Any response that elaborates on Inviting Explicit Content (IEC)
Inviting Non-Explicit Acknowledge	INA <i>Example</i>	Any response that provides space for the patient to say more by 'non-specifically acknowledging what was said.' <i>P: I just got upset again with it</i> <i>D: Did you, I hear that</i>	Inviting Explicit Affect	IEA	Any response that explicitly picks up on the cue/concerns affect (emotional impact).
Inviting Non-Explicit Invitation	INI <i>Example</i>	Any response that explicitly seeks further disclosure/information about the cue/concern without reference to the emotion. <i>P: I am very worried about the operation</i> <i>D: Tell me more about that (operation or worry)</i>	Inviting Explicit Affect Acknowledge	IEAa	Any response that elaborates on Inviting Explicit Affect (IEA)
Inviting Non-Explicit Implicit Empathy	INM <i>Example</i>	Any response which provides or further disclosure through empathetic function or seeks clarity of the nature of the cue/concern's emotion. <i>D: I understand</i>	Inviting Explicit Affect Explore	IEA	Any response that elaborates on Inviting Explicit Affect (IEA)
Inviting Explicit Content	IEC	Any response that explicitly picks up on the cue/concerns content (subject matter).	Inviting Explicit Affect EMpathy	IEAm	Any response/health provider behaviour that empathises with the patient's predicament. The provider might legitimise and/or share the patient's emotion with or without reference to the provider's own emotions. <i>P: I am worried about Friday's operation</i> <i>D: I appreciate that this must be really hard for you, it must be difficult waiting..</i>

Figure 27: Descriptions of Verona Inviting Health Provider Responses

Selection of consultation for analysis

The sampling frame and the characteristics of the groups within it are described below.

Sampling Frame and Method

Due to the amount of time required to apply the Verona coding definitions to videoed consultations and the limited time available for this study, it was decided to compare 4 groups

of contrasting consultations, involving GPs with high and low patient ratings of practitioner empathy, based on CARE scores, in practices serving very deprived and non-deprived groups.

The original study of 659 videoed consultations has been described previously in Chapter 4. For the Verona analyses, 112 consultations were coded, comprising 14 consultations each by 2 GPs from each of the 4 groups (Table 48). The selection process of the consultations and GPs can be found within the context chapter (Chapter 4)

Table 48: Descriptions of GP selection criteria

High CARE High Deprivation Top 2 GPs x 14 consultations each	Low CARE High Deprivation Bottom 2 GPs x 14 consultations each
High CARE Low Deprivation Top 2 GPs x 14 consultations each	Low CARE Low Deprivation Bottom 2 GPs x 14 consultations each

11.4 Results

Study practices

The 4 GPs selected from low deprivation groups were attached to 3 practices while the 4 GPs from high deprivation groups were attached to 2 practices. Table 48 shows the GP selection criteria for the present analysis.

The mean SIMD scores of the two types of practices differed significantly (Table 49) as expected, and were similar to the mean SIMD scores shown in Chapter 4 for all participating low and high deprivation practices.

Table 49: Sampling of GPs and their practices

Category	Total	Low Deprivation	High Deprivation	p-value
Practice	5	3	2	-
Mean SIMD	30.0	10.3	48.2	<0.00
Mean Practice Size		7,678	5, 108	<0.05

Characteristics of patients in the selected videoed consultations

Comparing the characteristics of patients in the high and low CARE groups showed no significant difference in the mean ages of the low deprivation group but in the high deprivation group the mean age of patients in the low CARE group was 10 years lower than in the high CARE group (Table 50).

Table 50: Patient demographics for high and low deprivation patient groups across the high and low CARE groups.

Patient Questionnaire Category	Patient Group	Statistic	Low CARE	High CARE	p-value
Age	Low Deprivation	Mean (SD) N	50.6 (21.1) 27	52.5 (19.2) 27	0.51
	High Deprivation	Mean (SD) N	46.5 (19.3) 26	56.2 (14.6) 30	<0.05
Gender	Low Deprivation	% Female N (%)	75.9 29 (51.8)	77.8 27 (48.2)	0.87
	High Deprivation	% Female N (%)	46.2 26 (46.4)	70.0 30 (53.6)	0.07
Individual Patient SIMD	Low Deprivation	Mean (SD) N	7.2 (5.8) 22	13.1 (11.6) 25	<0.02
	High Deprivation	Mean (SD) N	54.2 (18.8) 22	50.7 (23.7) 28	0.58

There was no significant difference in gender distribution between the high and low CARE groups in the low deprivation group (Table 50). However, in the high deprivation group, there were significantly fewer women in the low CARE (46%) compared with the high CARE group (70%).

Individual patient SIMD scores were significantly higher in the high CARE group, than in the low CARE group in low deprivation practices (13.1 v 7.2), but there was no significant

difference between high and low CARE groups in the high deprivation practices (50.7 v 54.2) (Table 50).

Patient's self-reported general health in the past year did not differ significantly between the high and low CARE groups in either the low or high deprivation groups. As expected, general health was reported as being worse (higher mean score) in patients from the high deprivation compared with those from low deprivation groups (Table 51).

As expected, patients in the high deprivation group consulted more often than patients in low deprivation group. There was no significant difference in the frequency of consultations (no. of times visited a GP in past year) between the high and low CARE groups in either the low or high deprivation groups although patients in the high CARE groups showed a trend towards consulting more often (Table 51).

Comparing the high and low CARE groups by depressive symptoms (PHQ-9 scores) and anxiety levels, there were no significant differences in either the low or high deprivation groups.

As expected, multiple morbidity (mean number of conditions) was higher in the high deprivation group compared with low deprivation group. The prevalence of multiple morbidity was significantly higher in the high CARE group, compared with the low CARE group in the high deprivation group, with a similar, but not significant difference in low deprivation group (Table 51).

Table 51: Health variables for high and low deprivation patient groups across the high and low CARE groups.

Patient Questionnaire Category	Patient Group	Statistic	Low CARE	High CARE	p-value
Rating of health during past year	Low Deprivation	Mean (SD) N	2.0 (0.8) 26	2.4 (1.1) 25	0.27
	High Deprivation	Mean (SD) N	2.6 (0.9) 25	3.0 (1.2) 30	0.13
No. of times visit GP in past year	Low Deprivation	Mean (SD) N	3.2 (2.4) 25	5.0 (3.3) 25	0.06
	High Deprivation	Mean (SD) N	6.4 (4.6) 25	9.1 (6.8) 30	0.93
Mental Health (PHQ-9)	Low Deprivation	Mean (SD) N	8.2 (7.7) 29	8.3 (7.5) 26	0.93
	High Deprivation	Mean (SD) N	5.2 (6.6) 25	6.4 (6.2) 28	0.24
Mental Health - Anxiety	Low Deprivation	Mean (SD) N	10.9 (3.4) 27	11.9 (3.7) 25	0.40
	High Deprivation	Mean (SD) N	10.5 (4.5) 25	9.7 (3.7) 26	0.68
Multiple Morbidity	Low Deprivation	Mean (SD) N	1.3 (1.2) 27	1.8 (1.5) 27	0.22
	High Deprivation	Mean (SD) N	1.6 (1.3) 26	2.9 (2.2) 30	<0.01

Characteristics of the high and low CARE groups; pre consultations

Table 52 compares the reasons for consulting given by patients in the high and low CARE groups.

Table 52: Consultation characteristics prior to the consultation

Patient Questionnaire Category	Patient Group	Statistic	Low CARE	High CARE	p-value	
Reason for consulting	Low Deprivation					
	Physical Problem	N (%)	26 (93.3)	21 (80.8)	0.08	
	Emotional Problem	N (%)	0 (0)	6 (23.1)	<0.01	
	Social Problem	N (%)	0 (0)	1 (3.8)	0.31	
	Administrative Problem	N (%)	0 (0)	1 (3.8)	0.31	
	Other Problem	N (%)	4 (14.8)	4 (14.8)	0.95	
	High Deprivation					
	Physical Problem	N (%)	20 (76.9)	28 (93.3)	0.08	
	Emotional Problem	N (%)	4 (15.4)	5 (16.7)	0.90	
	Social Problem	N (%)	2 (7.7)	0 (0)	0.13	
	Administrative Problem	N (%)	1 (3.8)	3 (10.0)	0.40	
	Other Problem	N (%)	6 (23.1)	3 (33.3)	0.40	
	Number of Problems to discuss	Low Deprivation				
			Mean	1.4	1.7	0.16
		(SD)	(0.8)	(0.8)		
		N	27	26		
High Deprivation						
	Mean	1.6	2.0	0.82		
	(SD)	(0.7)	(0.9)			
	N	26	30			
Low Deprivation						
How well they know doctor	Low Deprivation					
		Mean	3.8	3.4	0.57	
		(SD)	(0.9)	(1.6)		
		N	27	26		
High Deprivation						
	Mean	3.7	4.0	0.32		
	(SD)	(1.2)	(1.0)			
	N	26	30			
Expectations of Involvement	Low Deprivation					
		Mean	13.2	14.1	0.65	
		(SD)	(4.1)	(3.3)		
		N	25	26		
High Deprivation						
	Mean	14.1	14.3	0.86		
	(SD)	(3.3)	(3.1)			
	N	26	29			

No significant differences were found in the reasons given for consulting between the high and low CARE groups in either the low or high deprivation group, with the exception of emotional health. More patients consulted with an emotional problem in the high CARE low deprivation group than in the low CARE low deprivation group (Table 52).

The number of problems that the patients wished to discuss in consultations did not differ significantly between high and low CARE groups in either the low or high deprivation group, but tended to be slightly higher in the high CARE groups versus the low CARE groups (Table 52).

Relational continuity of care (how well the patient reported knowing their doctor) did not vary between high CARE and low CARE groups, in either the low or high deprivation group. Comparing expectations of involvement in decision making, there was no significant difference between the high and low CARE groups in either the low or high deprivation group (Table 52).

Table 53: Consultation characteristics post consultation

Patient Questionnaire Category	Patient Group	Statistic	Low CARE	High CARE	p-value
Mean CARE score	Low Deprivation	Mean (SD) N	38.5 (1.3) 29	46.7 (0.5) 27	<0.04
	High Deprivation	Mean (SD) N	38.5 (0.8) 26	47.2 (0.4) 30	<0.00
Consultation Length (minutes)	Low Deprivation	Mean (SD) N	7.5 (3.6) 26	9.0 (3.9) 26	0.14
	High Deprivation	Mean (SD) N	7.7 (3.3) 26	8.8 (4.7) 30	0.46
Rating of participation in consultation	Low Deprivation	Mean (SD) N	1.85 (0.8) 26	1.68 (0.6) 25	0.61
	High Deprivation	Mean (SD) N	2.12 (0.9) 25	1.72 (0.7) 29	0.09
Satisfaction with participation (decision making)	Low Deprivation	Mean (SD) N	13.2 (4.0) 23	13.6 (4.0) 21	0.55
	High Deprivation	Mean (SD) N	11.2 (3.7) 25	14.4 (3.5) 29	<0.00
Patient Enablement (PEI) (Av item)	Low Deprivation	Mean (SD) N	4.1 (3.1) 26	4.6 (2.9) 26	0.50
	High Deprivation	Mean (SD) N	3.50 (3.0) 25	4.5 (3.9) 29	0.43
Patient satisfaction	Low Deprivation	Mean (SD) N	1.9 (0.8) 27	1.6 (0.6) 27	0.26
	High Deprivation	Mean (SD) N	2.2 (0.8) 26	1.4 (0.5) 30	<0.00
Would recommend GP to family	Low Deprivation	Mean (SD) N	4.5 (0.9) 27	4.8 (0.5) 29	0.17
	High Deprivation	Mean (SD) N	4.6 (0.6) 26	4.9 (0.3) 30	<0.00

By design, mean CARE measure scores differed between the high and low CARE groups in both low and high deprivation groups. The results found higher mean scores for the high CARE groups for both the low and high deprivation groups (Table 53). Although consultation length was not significantly different between groups, consultation length within the high CARE group in both low and high deprivation groups was on average 1 minute longer than in the low CARE group.

A larger sample size (greater than 112 videoed consultations) may have led to a significant finding between the high and low CARE groups. Mercer and Watt (2007) studied over 3000 consultations and found that the average length of consultation time was shorter in the most deprived groups compared with the least deprived groups. This finding related to patient satisfaction with consultation length which was also significantly lower in the most deprived compared with the least deprived patient groups.

Previous studies by Howie et al (1991) agreed with the finding that consultation length was important to patient satisfaction with their consultation and that the long: short consultation length ratio fell when the general practice was busiest. Other studies on consultation length (Campbell, 2001; Stirling, 2001) have also found that time within the consultation is on average shorter in the most deprived areas.

Comparing the high and low CARE measure groups in the thesis showed there was no significant difference in the patient's ratings of their participation in decision making within high and low CARE consultations, in either the high or low deprivation group.

Patient enablement (PEI) scores were not significantly different between high and low CARE groups in either the low or high deprivation group, but there was a trend towards higher PEI values in high CARE consultations. Patient satisfaction (for decision making) was significantly higher (higher mean score) in the high deprivation group across the high and low CARE measure groups but not within the low deprivation group. The same result was seen for whether the patients would recommend the GP, with a significant higher (mean score) result being found within the high deprivation group but not for the low deprivation group across the high and low CARE measure groups (Table 53).

However, post consultation satisfaction (Table 53) with participation in decision making was significantly higher in high CARE than in low CARE groups in high deprivation but not in low deprivation group.

11.5 Comparison of Verona scores between GPs with high and low CARE scores in high and low deprivation groups

11.5.1.1 Cues and Concerns

Table 54 compares Cues, Concerns, and Health Provider Responses in high and low CARE consultations in high and low deprivation groups.

Table 54: Comparison of Cues, Concerns and Health Provider Responses between the CARE measure groups by deprivation

	<i>Patient Group</i>	<i>Statistic</i>	<i>Low CARE</i>	<i>High CARE</i>	<i>p-value</i>
Cues	Low Deprivation	Mean (SD) N	12.3 (7.2) 29	12.2 (6.8) 27	0.97
	High Deprivation	Mean (SD) N	8.7 (4.6) 26	16.0 (8.5) 30	
Concerns	Low Deprivation	Mean (SD) N	0.6 (0.9) 29	1.2 (2.3) 27	0.62
	High Deprivation	Mean (SD) N	0.4 (1.0) 26	1.2 (1.4) 30	
Health Provider Responses	Low Deprivation	Mean (SD) N	12.9 (7.4) 29	13.4 (8.6) 27	0.95
	High Deprivation	Mean (SD) N	9.1 (5.4) 26	17.1 (8.8) 30	

Within the low deprivation groups, there were no significant differences between the high and low CARE measure groups for the number of Cues, Concerns or Health Provider Responses (Table 54). However, within the high deprivation groups there were twice as many Cues, Concerns and Health Provider Responses recorded in the high compared with low CARE groups.

The following analysis describes the types of Cues observed within consultations.

Table 55: Comparison of Cues A-G responses between the CARE measure groups by deprivation.

	<i>Patient Group</i>	<i>Statistic</i>	<i>Low CARE</i>	<i>High CARE</i>	<i>p-value</i>
A	Low Deprivation	Mean (SD) N	2.0 (1.9) 29	1.2 (1.3) 27	0.09
	High Deprivation	Mean (SD) N	0.9 (1.0) 26	2.4 (2.9) 30	
B	Low Deprivation	Mean (SD) N	6.3 (4.1) 29	4.1 (5.6) 27	0.95
	High Deprivation	Mean (SD) N	3.8 (2.3) 26	6.5 (3.3) 30	
C	Low Deprivation	Mean (SD) N	0.8 (1.6) 29	1.3 (1.7) 27	0.06
	High Deprivation	Mean (SD) N	1.1 (1.8) 26	1.5 (2.3) 30	
D	Low Deprivation	Mean (SD) N	1.2 (1.4) 29	0.9 (1.4) 27	0.47
	High Deprivation	Mean (SD) N	1.1 (1.8) 26	2.5 (2.2) 30	
E	Low Deprivation	Mean (SD) N	1.0 (1.3) 29	1.4 (2.0) 27	0.67
	High Deprivation	Mean (SD) N	0.8 (1.1) 26	1.1 (1.4) 30	
F	Low Deprivation	Mean (SD) N	0.7 (1.0) 29	0.8 (1.0) 27	0.68
	High Deprivation	Mean (SD) N	0.3 (0.7) 26	1.5 (1.5) 30	
G	Low Deprivation	Mean (SD) N	0.4 (0.7) 29	0.7 (1.0) 27	0.38
	High Deprivation	Mean (SD) N	0.7 (1.1) 26	0.4 (0.7) 30	

Table 55 shows there were significant differences between high and low CARE groups for certain types of Cues offered by patients. Verbal hints that were vague or unspecified (Cue type A), verbal hints to hidden Concerns (Cue type B), neutral words or expressions that refer to stressful life events or conditions (Cue type D) and non-verbal expressions of emotions (Cue type F) were significantly higher (higher mean scores) in the high deprivation group across the high and low CARE measure scores. This was not found within the low deprivation group (Figure 28).

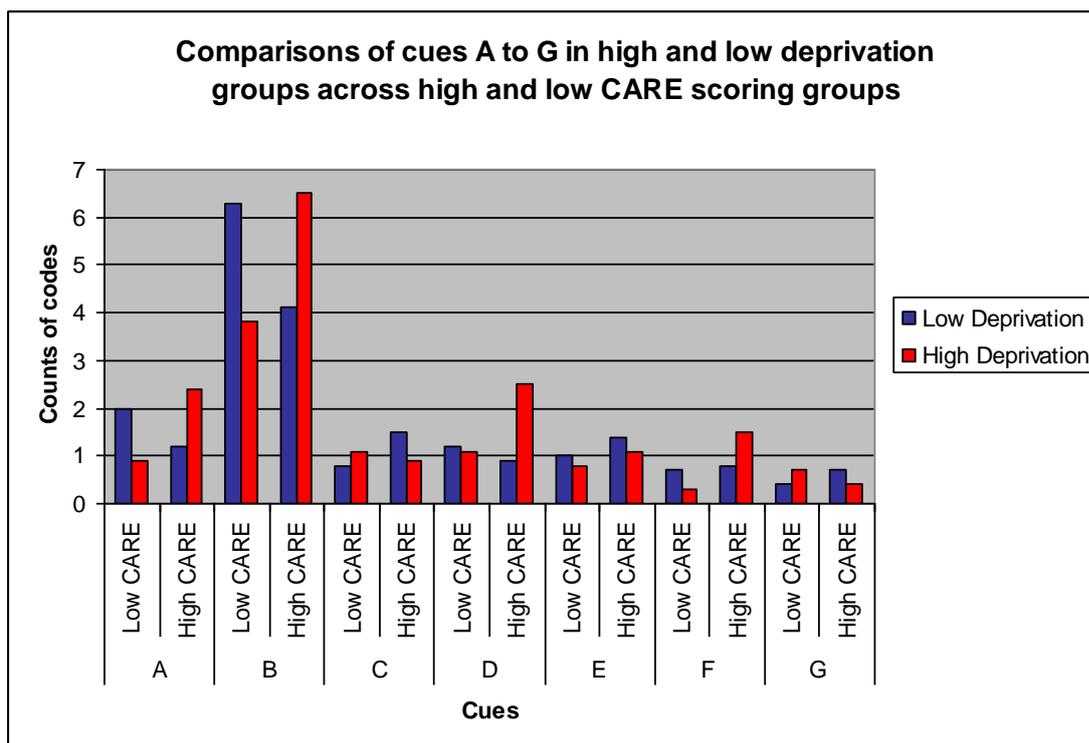


Figure 28: Comparison of Cues A to G for low and high deprivation groups across the high and low CARE groups

Health Provider Responses at Levels 1 and 2

Table 56: Comparison of level 1 and 2 Health Provider Responses between the CARE groups in high and low deprivation groups.

Health Provider Response	Patient Group	Statistic	Low CARE	High CARE	p-value
Inviting (I)	Low Deprivation	H	10.7 (6.5) 29	11.4 (7.7) 27	0.84
	High Deprivation	Mean (SD) N	7.0 (5.3) 26	13.8 (8.8) 30	<0.01
Non-Inviting (N)	Low Deprivation	Mean (SD) N	2.1 (1.9) 29	2.0 (1.9) 27	0.88
	High Deprivation	Mean (SD) N	2.1 (2.2) 26	3.3 (2.4) 30	<0.04
Non-Inviting Non Explicit (NN)	Low Deprivation	Mean (SD) N	0.6 (0.9) 29	0.3 (0.5) 27	0.56
	High Deprivation	Mean (SD) N	0.2 (0.5) 26	0.9 (1.1) 30	<0.01
Non Inviting Explicit (NE)	Low Deprivation	Mean (SD) N	1.7 (1.8) 29	1.7 (1.9) 27	0.76
	High Deprivation	Mean (SD) N	1.2 (1.3) 26	2.4 (2.2) 30	<0.05
Inviting Non-Explicit (IN)	Low Deprivation	Mean (SD) N	10.3 (6.9) 29	11.4 (7.7) 27	0.63
	High Deprivation	Mean (SD) N	7.6 (4.8) 26	13.8 (8.8) 30	<0.01
Inviting Explicit (IE)	Low Deprivation	Mean (SD) N	0.3 (1.7) 29	0.0 (0) 27	0.34
	High Deprivation	Mean (SD) N	0.0 (0.2) 26	0.1 (0.3) 30	0.64

Table 56 shows a significantly higher number of Inviting (I) and Non-Inviting (N) Health Provider Responses within the high CARE group in deprived settings, but no significant differences between high and low CARE groups in low deprivation groups.

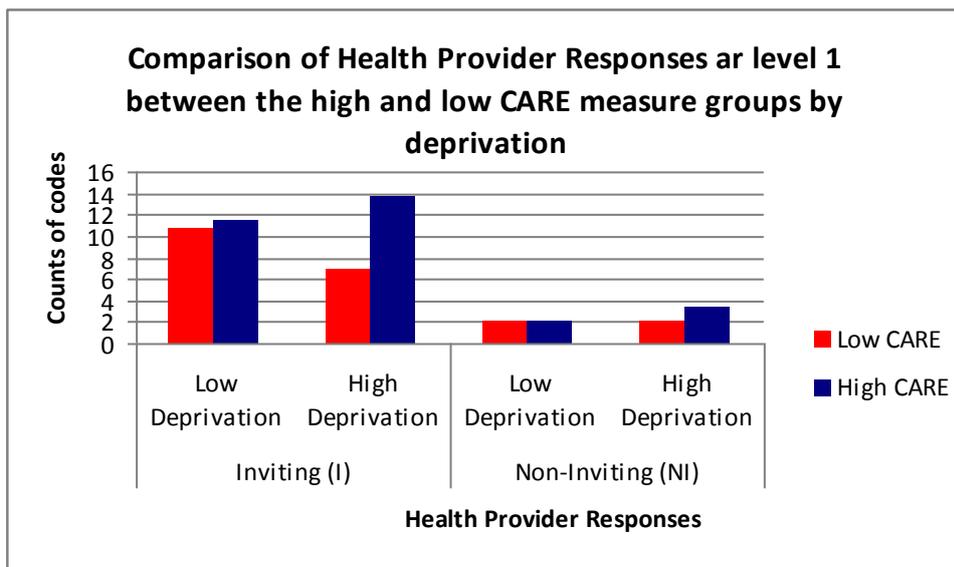


Figure 29: Comparison between levels 1 Health Provider Responses between the CARE measures by deprivation

Table 56 also shows that there were a significantly higher number of Health Provider Responses within the high deprivation group for Non-Inviting Non-Explicit (NN), Non Inviting Explicit (NE), and Inviting Non-Explicit (IN) compared with the low deprivation group between the low and high CARE groups. There was no significant difference in Inviting Explicit (IE) Health Provider Responses (Figure 30).

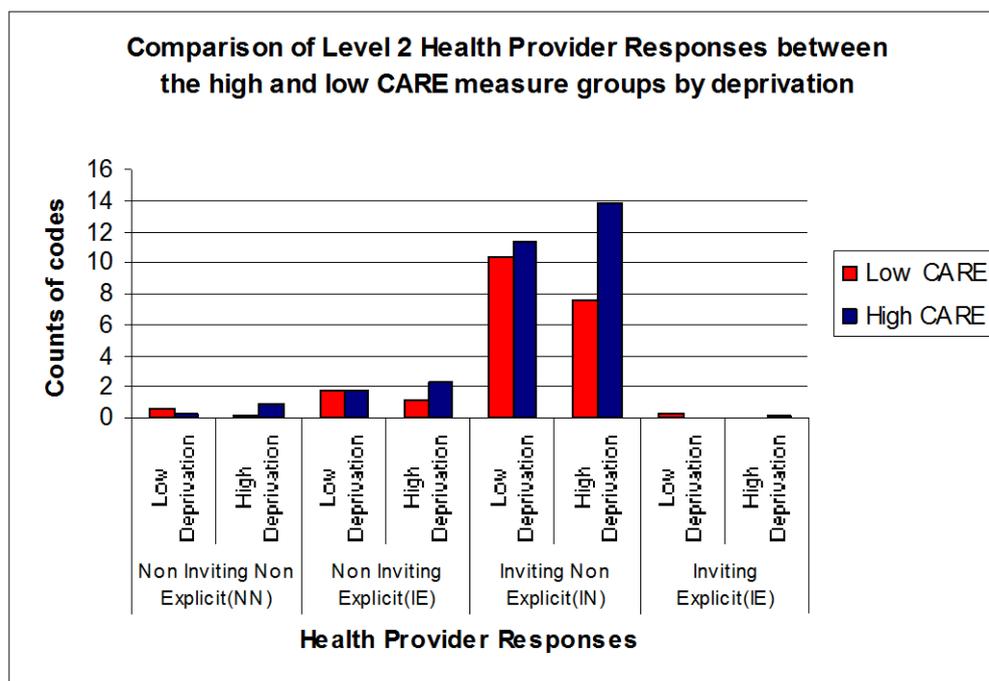


Figure 30: Comparison of between level 1 health provider responses between the CARE measure groups by deprivation

Health Provider Responses at Level 3

Table 56 shows a significantly higher number of Non Inviting Non Explicit Ignore (NNI) and Inviting Non Explicit Back Channel (INB) Health Provider Responses in high compared with low CARE groups in high deprivation group. This difference was not found within the low deprivation group. Within the low deprivation group there were a significantly higher number of Inviting Non Explicit Implicit Empathy (INM) Health Provider Responses in the high, compared with the low CARE groups. This result was not found within the high deprivation groups.

Table 56 also shows that health provider response Non Inviting Explicit Switching (NES) was significantly higher (higher mean counts) within high CARE patient for both the low and high deprivation groups.

There were no observations of the following 6 codes; Inviting Explicit Content (IEC), Inviting Explicit Content Explore (IECe), Inviting Explicit Affect (IEA), Inviting Explicit Affect Acknowledge (IEAa), Inviting Explicit Affect Explore (IEAe) and Inviting Explicit Affect Empathy (IEAm).

11.5.1.2 Analysis of Key Confounders

The results were re-examined to assess the effects of potential confounding variables (Table 51). The data were examined within one model comparing the results by the patient's practice area deprivation status. Details of the list of potential confounders can be found in Appendix I.

Logistic regression analysis was carried out using SPSS v18.0. When controlling for potential confounders (Table 57), there was no change to the statistical significance for the deprived group of total number of Cues (OR= 1.27, $P < 0.02$, 95% CL (1.05-1.54)) or Health Provider Responses (OR= 3.21, $P < 0.01$, 95% CL (1.07-1.61)). However it was found that Concerns no longer produced a significantly higher number of counts between the high and low deprivation groups when the confounding variables were taken into account.

Table 57: Beta, p-values, odd's ratios and CI's of odd's ratios of potential confounders for the high and low CARE groups by deprivation

Variable	Deprivation Status	Ref	Adjusted ¹	
			OR (95% CI)	p-value
Total number of Cues	L	0.93	(0.83-1.03)	0.17
	H	1.27	(1.03-1.34)	<0.02
Total number of Concerns	L	1.29	(0.82-2.01)	0.27
	H	3.21	(0.88-11.7)	0.08
Total number of Health Provider Responses	L	0.95	(0.87-1.04)	0.29
	H	1.31	(1.07-1.61)	<0.01
Cues	-			
A	L	0.55	(0.33-0.94)	<0.03
	H	1.68	(0.98-2.89)	0.06
B	L	0.91	(0.76-1.09)	0.32
	H	1.53	(1.02-2.20)	<0.04
C	L	1.13	(0.75-1.71)	0.55
	H	1.31	(0.69-2.49)	0.41
D	L	0.75	(0.46-1.23)	0.26
	H	1.96	(1.04-3.68)	<0.04
E	L	1.12	(0.73-1.72)	0.60
	H	1.20	(0.68-2.14)	0.53
F	L	0.95	(0.42-1.32)	0.32
	H	7.16	(1.28-40.2)	<0.03
G	L	0.85	(0.36-2.03)	0.71
	H	0.89	(0.32-2.48)	0.82
Health Provider Responses				
Non-Inviting (NI)	L	0.91	(0.65-1.27)	0.56
	H	1.29	(0.97-1.92)	0.20
Inviting (I)	L	0.94	(0.84-1.05)	0.27
	H	1.31	(1.06-1.62)	<0.01
Non-Inviting Non Explicit (NN)	L	0.38	(0.13-1.13)	0.08
	H	4.21	(1.02-17.4)	<0.05
Non-Inviting Explicit (NE)	L	1.00	(0.71-1.42)	0.99
	H	1.60	(0.90-2.86)	0.11
Inviting Non Explicit (IE)	L	0.96	(0.86-1.06)	0.40
	H	1.30	(1.05-1.61)	<0.02
Inviting Explicit (IE)	L	0.10	(0-0.0)	1.00
	H	1.52	(0.10-23.9)	0.77

N (%) = Number and percentage of participants with individual Davis codes

Ref Reference Group, OR odds Ratio, CI 95% confidence interval, p values

Adjustments estimates using regression multivariable logistic regression with robust standard errors and:

¹ Adjustment for age and gender, SMID, multiple morbidity (MM), reason for consulting emotional problem

Deprivation Status; L Low Deprivation; H High deprivation

11.6 Discussion

This is the first study to compare the numbers and types of Cues, Concerns and Health Provider Responses, as defined by the Verona coding system, in routine general practice consultations in low and high deprivation groups, comparing consultations with practitioners ranked high or low in terms of patient perceptions of practitioner empathy, using the CARE measure.

The CARE measure (Mercer et al. 2004) scores were based on the mean scores achieved by each GP in a previous series of unselected consultations as outlined by the previous study (Mercer et al. 2012). This selection strategy aimed to maximise the value of 112 videoed and Verona-coded consultations, by the highest and lowest scoring GPs in terms of patient-rated empathy (mean CARE measure score) in both the high and low deprivation groups.

Summary of Findings

11.6.1.1 Characteristics of the participating patients

The selected GPs provided two patient groups that represented the widely differing mean deprivation scores (SMID 2006) of 49 (SD 40) and 14 (SD 15) in the high and low deprivation areas respectively ($P < 0.0001$) as intended (Table 49). The majority of the participating patients were female within the exception of the low CARE patient group which included fewer women (40%) than the high CARE group (70%). Also it was found that within the high deprivation group, the low CARE scoring group were on average 10 years younger than the high CARE group (Table 49). The differences seen in the variables of age, gender and SMID score were considered in the list of potential confounding variables.

Analysis of the patients self-reported health within the past 12 months, anxiety and mental health (PHQ-9) status, expectations of the consultation and reasons for consulting were considered across the high and low deprivation groups. Further analysis on the number of problems the patients came to the consultation to discuss as well as how well the patient reported knowing their GP (relational continuity of care) and the patient's expectations of

involvement in decision making were considered across the high and low deprivation groups. The results of this work can be found in Appendix L.

11.6.1.2 Verona Code results compared by CARE and deprivation status

Across all groups there were consistently more Cues than Concerns recorded. The analysis of Cues showed a significantly higher number of Cues A^g, B^h, Dⁱ and F^j within the high deprivation compared with the low deprivation across the high and low CARE measure groups. This finding was not found within the low deprivation groups. This pattern was also observed in relation to the number of Concerns.

In terms of Health Provider Responses at levels 1 and 2, there were significantly higher numbers of Inviting (I), Non Inviting (I), Non-Inviting Non Explicit (NN), Non Inviting Explicit (NE) and Inviting Non Explicit (IE) responses within the high deprived group compared with the low deprivation group across the high and low CARE measure groups. This finding was not found within the low deprivation groups. There were no significant differences concerning Inviting Explicit (IE) Health Provider Responses across any group.

There were significantly higher numbers of level 3 Health Provider Responses Non Inviting Non Explicit Ignore (NNI) and Inviting Non Explicit Back Channel (INB) within the high deprivation group compared with the low deprivation group and higher numbers of Inviting Non Explicit Implicit Empathy (INM) found within the low deprivation group compared with the high deprivation group across the high and low CARE measure groups. Non Inviting Explicit Switching (NES) was significantly higher in the high CARE measure groups for both the high and low deprivation groups. These findings suggest that health providers in both the high and low deprivation setting tend to used encouraging responses that facilitate

^g Cue A refers to words or phrases which are vague or unspecified and which are used to describe the patient's emotions

^h Cue B refers to verbal hints to hidden Concerns, which the patient may verbalize through the use of emphases, metaphors or profanities.

ⁱ Cue D refers to neutral words or phrases that mention issues of potential emotional importance, which may refer to stressful life events and conditions.

^j Cue F refers to non-verbal expressions of an emotion.

communication. The style of responding is often Non Explicit suggesting that the encouragement is not directly verbalized but can also be through consultations tasks, non-verbal gestures and the provision of space for the patients to disclose information at their own pace.

The findings are not novel and have been seen within previous literature (Eide et al. 2010; Eide et al. 2011; Oguchi et al. 2010; Vatne et al. 2010; Del Piccolo et al. 2004; Zimmermann et al. 2011; Zimmermann et al. 2007; Zimmermann et al. 2011) using the Verona coding system. The previous literature has shown that patients feel acknowledged by the health provider when the Inviting responses, active listening and clarification of the information are sought.

11.7 Strengths and Weaknesses

The main strength of the current research is that it explores empathy through a unique large data set of videoed general practice consultations. This study measures empathy within the consultation by comparing the Verona Coding definitions of Emotional Sequences for Cues and Concerns (Verona-CoDES-CC) (Del Piccolo et al. 2009) with the Consultations and Relational Empathy Measure (CARE) (Mercer et al. 2004). The Verona coding system has been used in a number of settings including pain management (Eide et al. 2010) and paediatric (Vatne et al. 2010) consultations, however to the author's knowledge it has not been used in comparison with other consultation process measures.

A further strength of the study was seen within the excellent intra- and inter-rater reliability scores that were achieved between coders, which indicated that the Verona coding system (Del Piccolo et al. 2009) can be a reliable tool for coding Cues and Concerns within primary care consultations.

The length of time needed to transcribe and code consultations using the Verona system (Del Piccolo et al. 2009), limited the size of the study to 112 consultations i.e. 8 per GP. However, this number of consultations is considerably more than in previous studies that also used the

Verona-CoDES-CC system (Vatne et al. 2010; Eide et al. 2010; Eide et al. 2011; Del Piccolo et al. 2004; Zimmermann et al. 2011; Eide et al. 2011; Oguchi et al. 2010).

There was a female/male bias with over twice as many female patients being represented within the selected consultations as male patients (36 males and 76 females). However, this reflects the entire data set in which approximately 2/3^{rds} of participants were female in both the low and high deprivation groups, which is also representative of consulting patterns in general, practice within the UK and did not have a negative impact on the analysis (Table 48).

11.8 Main findings and relationship to published literature

The Verona coding system makes it possible to analyse consultations in terms of the number and type of Concerns and Cues shown by patients and the responses of the GPs.

Typically, the patient enters the consultation with a range of Concerns, giving Cues which may or may not elicit a range of responses from the GP. The Verona system allows analysis of how GPs respond to Cues according to a range of categories and also the frequency of Cues offered by the patient. There are theories and evidence (Oguchi et al. 2010; Eide et al. 2011) that link the number of Cues and the types of Health Provider Responses. For example, if a Health Provider Response is to 'invite' or encourage the patient in response to a patient cue, there is a higher likelihood of eliciting a Concern. If the health provider blocks or responds negatively to either a Cue or Concern, then there can be a high ratio of Cues to responses, creating a negative feedback cycle (Eide et al. 2011).

The main findings from this study are differences between the high and low CARE groups within high deprivation group, that were not found within the low deprivation group in terms of the type and frequency of Cues, Concerns and Health Provider Responses within the consultations. These findings are discussed below.

Cues

There were consistently higher numbers of Cues in comparison to the number of recorded Concerns in both the high and low CARE as well as the high and low deprivation groups. This finding was consistent with other studies using the Verona coding system (Oguchi et al. 2010; Eide et al. 2011; Agledahl et al. 2011; Eide et al. 2011; Vatne et al. 2010; Eide et al. 2010). The types of Cues also differed between the CARE groups, with statistically significantly higher numbers of A^k, B^l, D^m and Fⁿ being recorded within the high deprivation compared with the low deprivation groups regardless of the groups CARE status. The occurrence of Cues B, D were in line with previous Verona literature (Eide et al. 2010; Eide et al. 2011; Zimmermann et al. 2011), however, the high numbers of codes A and F within the high deprivation area were novel to this research (Eide et al. 2010; Eide et al. 2011; Oguchi et al. 2010; Vatne et al. 2010; Del Piccolo et al. 2004; Zimmermann et al. 2011; Zimmermann et al. 2007).

A possible explanation for the high frequency of Cue A could be the presence of family members or significant others within the consultation which the literature suggests is associated with less expression of Cues and Concerns (Oguchi et al. 2010). However, consultations that included more than one patient accounted for 4.5% of the current dataset, therefore ruling out this conclusion. An alternative explanation could be the mixture of ongoing and new consultations. The nature of ongoing consultations is that both the patient and practitioner are more familiar with each other and the concern that is being discussed. This may result in certain aspects of the discussion being more subtle or indirectly verbalized therefore increasing the likelihood of some discussion points being missed by the coder. However, the amount of time spent on coding and inter-rater reliability in the thesis makes the likelihood of errors of this nature to be small.

^k Cue A refers to words or phrases which are vague or unspecified and which are used to describe the patient's emotions

^l Cue B refers to verbal hints to hidden Concerns, which the patient may verbalize through the use of emphases, metaphors or profanities.

^m Cue D refers to neutral words or phrases that mention issues of potential emotional importance, which may refer to stressful life events and conditions.

ⁿ Cue F refers to non-verbal expressions of an emotion.

As for Cue F, this novel finding could be the result of differences in study design as the current study used the full set of Cues, Concerns and Health Provider Responses categories unlike other studies that have used subsets of the coding system (Eide et al. 2010; Eide et al. 2011; Oguchi et al. 2010; Vatne et al. 2010).

All the findings for Cues remained statistically significant when the potential confounding variables were taken into account^o (Appendix I).

Concerns

A higher number of concerns were expressed by patients in the high CARE group for both the high and low deprivation groups. This finding was significant in the high deprivation but not in the low deprivation group. The finding remained statistically significant when the potential confounding variables were taken into account (Appendix I).

Concerns were expressed in association with higher levels of empathic responses by the health provider, as reported by patients. This may be explained by a practitioner effect, as practitioners who score higher in terms of empathy within the consultations tend to draw out the patient's Concerns. Patients who rated their GP in the high CARE group reported more instances of multiple morbidities (MM) suggesting that patients with multiple health problems tended to rate their perception of their GP's empathy highly. This finding was only significant in the deprived status group. If the patient feels acknowledged by an interested listener, this can promote feelings of being understood (Zimmermann et al. 2011; Reynolds and Scott 1999), and increase patient satisfaction (Zimmermann et al. 2011; Mercer et al. 2009) and collaboration (Zimmermann et al. 2011; Zimmermann et al. 2007) which may also explain the higher counts of Concerns within the high CARE (empathy) group.

Health Provider Responses

^o Age, gender, multiple morbidity (MM), rating of health in past year, duration of symptoms, PHQ-9 and anxiety.

The first two levels of the Verona system (Del Piccolo et al. 2009) are the most frequently cited within the Verona literature (Eide et al. 2010; Eide et al. 2011; Oguchi et al. 2010; Vatne et al. 2010), and the current results confirm the previous findings that GPs tend to respond to their patients' in an Inviting (I) manner that is not always explicit. These findings related to literature by Suchman et al (Suchman et al. 1997) who see these responses as the first stage in clarifying the situation and the emotions, therefore acknowledging the empathic opportunity. This is also consistent with the consultation's goals which are to learn more about the patient, their needs and their expectations (Suchman et al. 1997). At level three the analysis of the numbers of coded occurrences were considered too small to examine against a list of potential confounders.

At level three, the most coded health provider response was Non Inviting Explicit Back Channel (NEB)^p. Backchannel communication is present in all cultures and languages though frequency and use may vary. This may explain its high number of counts within the consultations. Also at this level, health provider response category Inviting Non Explicit Blocking (INB)^q was recorded more often within the high deprivation compared with the low deprivation group across the high and low CARE groups. The low number of this occurrence agrees with findings that suggest minimal encouragement responses are more favoured by health providers (Eide et al. 2011).

There were also a number of differences recorded between the CARE groups, with Non Inviting Non Explicit Ignore (NNI)^r recorded a significantly higher number of times within the high CARE measure group within the high deprivation compared with the low deprivation group, whereas on Inviting Explicit Switching (NES)^s was observed more often within the high CARE measure group regardless of the patient's deprivation status. Switching (NES) refers to a response by the GP that changes the frame of reference, which in terms of

^p Non Inviting Explicit Back Channel (NEB) refers to any response that provides space for the patient to say more through minimal prompting (for example; hmm, uhuh yes).

^q Inviting Non Explicit Blocking (INB) refers to health provider responses that oppose any further discussion about the cue/concern

^r Non-Inviting Non Explicit Ignore (NNI) refers to any response that appears to ignore or takes no account of both the content and emotions of the cue/concern

^s Non Inviting Explicit Switching (NES) refers to any response that shuts down or changes the frame of reference of the cue/concern.

the consultation could see the GP refer the patient to other members of the practice team such as the practice nurse or to specialist care such as physiotherapy. These findings suggest that patients may have to attend multiple appointments to discuss their Concerns which can have a negative effect on the patient's continuity of care and increase patient burden (May et al. 2009).

The results show that high instances of the health provider switching the frame of conversation did not affect post consultation satisfaction. This finding is contrary to previous studies that have shown that non supportive responses are associated within negative effects on communication often leading to repetition of Cues or Concerns (Eide et al. 2011; Suchman et al. 1997). Switching within the consultation setting may suggest the health provider is in control of the conversation (Cegala et al. 2000) however this was not considered negatively by the high deprivation group. The findings showing higher reported patient enablement (PEI) within the high compared with the low CARE consultations, as those patients who reported feeling more able to deal with their health with the support of their GPs may also be more satisfied with a communication style that challenges the patient practitioner relationship (Carnwell and Daly 2003).

Multiple statistical testing can lead to false positive findings. This may be the result of the numbers of items being tested in this case consultations being too few to fulfil the criteria needed to define a positive result. However, the current study used more consultations than some other published study (Eide et al. 2010; Oguchi et al. 2010; Vatne et al. 2010; Eide et al. 2011). The findings were also compared against a list of potential confounders in order to test for false negative effects (Appendix I).

11.9 Conclusions

The findings confirmed previous findings that more Cues than Concerns are raised within consultations, and that the types of Cues that are most frequently presented within the consultations tend to be vague, unspecific and hint to hidden Concerns (Cue type A and B) as well as being relevant to the patient's emotional and social well-being (Cue type D). In terms of Health Provider Responses, more Inviting (I) Health Provider Responses were used in both the high and low deprivation, consultations as expected.

The high deprivation patient group presented significantly higher numbers of Cues, and Concerns as well as reporting worse health and multiple morbidities. These patients often attend multiple appointments, take more medication and experience more disruption to everyday life (Wagner 1998). These findings relate to the observation that patients from high deprivation areas compared with low deprivation areas tend to report greater numbers of psychological problems, more multi morbidity, and more chronic and longer term health needs (Mercer and Watt 2007).

Novel findings within the analysis are the initial comparison between the Verona coding system at all levels as well the CARE measure (Mercer et al. 2004). Other novel findings include the high frequency of codes A and F within medical consultations, which have not been found within previous studies (Vatne et al. 2010; Del Piccolo et al. 2004; Zimmermann et al. 2011; Eide et al. 2011). However comparing the patient's deprivation status with their perception of their GPs empathy has been found to result in more Cues being observed in the high deprivation compared with the low deprivation group. This trend was repeated for the number of Concerns. This novel finding indicates that non-verbal expressions of emotion (Cue type F) are important within high deprivation consultations alongside verbal Cues and Concerns.

In terms of Health Provider Responses, significantly higher numbers of Non Explicit responses were recorded in the high deprivation group (Health Provider Response; Inviting Non Explicit (IN) and Non Inviting Explicit (NE)), suggesting that GP responses were not always verbal instructions such as questions or acknowledgements but the GP leaving space for the patient to say more without further prompting.

A further novel finding was the high use of Health Provider Response Non Inviting Explicit Switching (NES) in both the high and low deprivation groups, which indicates that Cues or Concerns raised within the consultation are frequently referred to a third party (i.e. practice nurse for further discussion) or dealt with at a later date (i.e. next time the patient is in consulting with the GP). The reason for more use of practice assistance in the consultations could relate to the similar consultation lengths despite the trend of more health Concerns needing to be discussed within the high deprivation group within the same amount of time as patients who came to discuss fewer health Concerns.

Referrals to third parties in primary care are a fairly common practice. They can allow the GP to manage their workload and seek a second opinion. The literature shows that patients from high deprivation areas compared with less deprived areas tend to wait longer for an appointment with their GP and that in Scotland despite the steep gradient of need, GPs in high and low deprivation areas are even distributed (Mercer and Watt 2007).

The comparison of the high and low CARE measure consultations did show a high number of Health Provider Responses Non Inviting Non Explicit Ignore (NNI) and Inviting Non Explicit Back Channel (INB) within the high deprivation group and higher numbers of Inviting Non Explicit Implicit Empathy (INM) within the low deprivation group. These findings suggest that more time within the high deprivation consultation involved the GP providing simple acknowledgement. This style of consulting was not seen within the low deprivation group which recorded high instances of implicit empathy (i.e. the GP acknowledging the emotional content of the patient's Cue or Concern).

The fact that the significant findings for Non Inviting Non Explicit Ignore (NNI) and Inviting Non Explicit Back Channel (INB) were recorded within the high but not the low deprivation group has not been reported in previous literature. The work carried out on the analysis of confounders indicates that the differences between the high and low deprivation group are not the result of the patient's multiple morbidity status (MM). Multiple morbidity has been associated with higher deprivation groups in previous research (Mercer et al. 2009; Townsend et al. 2008). A point to consider is the difference between the CARE measure scores between the high and low deprivation groups. As mentioned previously the CARE scores for the high deprivation group was measured across 40-50 consultations which is considered ideal, however the low deprivation group's score was measured over 13-15 consultations. The difference may be the result of the high deprivation group having a more accurately calculated CARE measure score than the low deprivation group. The patient's characterization as low or high deprivation reflects their practices SMID rating. This can be discussed in the context chapter (Chapter 4) and there was no evidence of selection bias in terms of the patient's deprivation score. A further reason for the difference found between the high and low deprivation groups could be that the patients within the low and high deprivation groups regard different aspects of the consultation as important to their perception of empathy.

Implications for practice/policy/future research

The Verona coding system has limitations. Although it is a validated communication tool it does not capture the amount of time the Cues, Concerns and Health Provider Responses account for within the set consultation time frame. The Verona system also fails to provide codes for novel conversation points that the GP may elicit that do not necessarily follow from a Cue or Concern elicited by the patient. Also the use of the Verona coding system is very time consuming and although useful as a research tool would need to be adapted to suit larger data sets.

However, in terms of the current research objectives the Verona method was a practical and reliable way of measuring the amount, type and frequency of empathic responses within the general practice setting and has shown that Cues, Concerns and Health Provider Responses are affected by empathic responses, and that these responses are most likely to be forms of basic acknowledgement in both the low and high deprivation groups.

The work also answers the thesis's fourth aim that patient's perceptions of GP empathy are related to measures of GPs response to emotional Cues in the high deprivation group but not the low deprivation group. This was seen through findings that reported more Cues, Concerns and Health Provider Responses being discussed within the high CARE categories in the high but not the low deprivation group.

The core finding of the results is that the Verona Coding definitions of Emotional Sequences for Cues and Concerns (Verona-CoDES-CC) (Del Piccolo et al. 2009) differentiated between high and low CARE group in the high deprivation but not the low deprivation groups. At a practice level this finding suggests that doctors should be aware that high and low deprivation groups use different criteria to judge how empathic their GP is during the communication within the consultations setting. At a policy level empathy and empathic communication in health care has been seen as key attributes of health care professionals and their style of practice. However, policies do not acknowledge that empathy has varying meanings to high and low deprivation groups. This difference should be acknowledged in future policy and practice.

Future work with the Verona Coding definitions of Emotional Sequences for Cues and Concerns (Verona-CoDES-CC) (Del Piccolo et al. 2009) could include analyses of sequences of consultations, to measure if patterns of Cues lead to trends in Health Provider Responses over a series of meetings between the same patients and practitioners or for certain types of consultations i.e. emotional compared with physical complaints. This would provide an insight into how patient-practitioner rapport is formed, maintained and challenged.

Other research could assess the impact that empathy within the consultation has on outcome measures, as well as measure of the consultation process. An analysis of consultation process measures can be found within the Davis chapters (chapter 6 & 7) of this study.

Chapter 12: General Discussion

12.1 Introduction

This chapter begins by discussing the results of the previous chapters in the context of current literature. Thereafter, the strengths and limitations of the thesis are discussed. The chapter concludes by outlining recommendations for future clinical practice, research and health policy.

12.2 Summary of the thesis in the context of current literature

Thesis process

The thesis analysed 499 videoed general practice consultations using the Davis Observation Code and 112 using the Verona Coding definitions of Emotional Sequences for Cues and Concerns (Verona-CoDES-CC) to examine the relationships between patients' perceptions of doctors' empathy, patient enablement, the patients' perception of their own health outcomes (MYMOPs) and the amount and the type of Self-Management Support (including Anticipatory Care) in general practice consultations. The relationships between these factors were also compared in consultations in groups of high or low socio-economic deprivation in Scotland.

Mercer and Watt's paper (Mercer and Watt 2007) provided an in-depth characterisation of clinical encounters typical of a Scottish general practice setting. Their comparison of the most and least deprived groups showed that the most deprived groups were associated with slower access to care, less time spent with the doctor, higher GP stress and lower patient enablement in encounters for psychosocial problems. Mercer and Watt's study, however, did not discuss how these differences occurred in terms of what processes and communication took place within the high and low deprivation consultations. It is the communication, as well as the tasks carried out as a result of this communication, that the thesis sought both to understand and assess their impact on the population served.

The process of observing the videoed general practice consultations allowed all aspects of the consultations to be considered. Verbal, as well as non-verbal communication was viewed and coded using the Verona system. This allowed tone, facial/body gestures, as well as eye contact, to be considered for both the patient and the GP. The behaviours and activities observed within consultations were coded by the Davis measure. The use of the videos allowed for non-verbalized activities within the consultations to be coded appropriately, as the coder was able to pick up on these while viewing the consultation video.

Furthermore, differences in the consultation content partly drove the coding process. The results in chapter 4 showed that patients from high deprivation groups tend to consult their GP with a greater number of psychological problems and long term chronic illness, compared with the low deprivation patient group, who tended to consult their GP with physical complaints. These differences impact not only on the consultation time but also GP workload, with GPs in high deprivation areas consultation time spent fielding more health concerns, questions and dealing with the emotional labour that this type of workload can involve.

The video data used provided a comprehensive and valuable method of capturing the consultation process. The Verona coding system provided categories for a range of communicative behaviours for both the patient and the health providers. The Davis method also provided coding categories for activities within consultations that were applicable to the current data set. However, the thesis author and the other Davis coder (SM) took the decision to add additional categories to code routine measures, administrative tasks and health promotional tasks that occur within UK general practice consultations.

Main Findings

The main finding within the thesis is that Self-Management Support (including Anticipatory Care) did not feature very often in the coded general practice consultations in either the high and low deprivation groups, despite the term featuring in a number of Scottish Government health policies (The Long Term Conditions Alliance Scotland 2008; The Scottish

Government 2009). Self-Management Support within the current data involved the discussion of health education and compliance and was associated with patients' perception of GP's empathy in the high deprivation group, but not in the low deprivation group.

Patient's perceptions of GP empathy (as assessed by the CARE measure) were not found to be related to Anticipatory Care. An association with Self-Management Support was found in the low but not within the high deprivation group. The findings suggest that patients in high and low deprivation groups may use different criteria to judge their GP's empathy when they complete the CARE measure. Patient enablement was not related to Self-Management Support or Anticipatory Care in either the high or low deprivation groups. However, a change in health outcome in terms of symptom improvement was positively related to Anticipatory Care in the low deprivation but not high deprivation group.

The use of the Verona coding system in the current study underlined the finding that patients in high and low deprivation groups use different criteria to judge their GP's empathy. In areas of severe socio-economic deprivation, consultations with practitioners with high patient ratings of empathy (high CARE measure scores) had more emotional Cues, Concerns and encouraging Health Provider Responses, compared with consultations with practitioners with low patient ratings of empathy. These associations between Verona codes and GP CARE scores were not observed in consultations in low deprivation areas.

Empathy within the literature is widely regarded as an important attribute of healthcare professionals, and has been linked to higher patient satisfaction, enablement, and some health outcomes. Previous studies that informed the thesis objectives consider empathy to be an essential component of the development and continuation of the therapeutic relationship (Mercer and Reynolds 2002). It is a multifaceted concept that involves the knowledge of societal as well as cultural rules and norms alongside the ability to respond appropriately to the norms that the patient holds and the attached emotions.

12.2.1 Additional Findings

Additional findings within the thesis that higher numbers of Cues than Concerns were coded in the consultations are consistent with other studies that have used the Verona coding system

(Eide et al. 2010; Eide et al. 2011). The analysis shows that there were more Cues, and Health Provider Responses of differing types coded in the high CARE (i.e. the group where the GP was perceived to be highly empathic) compared with the low CARE group. Further analysis of the Verona data showed that significantly more Cues than Concerns were coded in the high deprivation group but not in the low deprivation group. This finding suggests that patients from higher deprivation groups raise more emotional Cues than Concerns and that the GPs who respond to these cues in an opening and encouraging way are perceived to be more empathic.

There are a number of possibilities as to why more concerns were not raised within consultations. One reason is the limited time available within the consultation to address all patients' questions, as well as record the information the GP needs to make a diagnostic decision (Mercer et al. 2007). Another reason is that time within the consultation is spent finding out to what extent the patient would like to be involved in the decision making process (de Haes 2006; Deber and Kraetschmer 1996) as well as reviewing the patient's medication history and history of their previous investigations and referrals to secondary care.

The role of decision making within the consultations raised questions concerning the patient practitioner relationship. There were different decision making roles found between high and low deprivation patients. The low deprivation groups voiced their concerns more often than high deprivation groups, regardless of their perceptions of their GPs level of empathy. This is arguably the result of the tendency of low deprivation patients to have a comparatively higher educational status (Mercer et al. 2005), which allows them to feel comfortable conversing with their GP, and more (Mercer and Watt 2007) likely to expect involvement in shared decision making (de Haes 2006).

A study by Richards et al (Richards et al. 2002) on the socio-economic variations in response to chest pain found that the patient's socio-economic status partly explains the patient's perceptions of their own health and their expectations of future health. Factors that impact on the patient perceptions of what is normal health include their illness biographies and the perceived quality of previous encounters with health professionals. The Richards et al

(Richards et al. 2002) paper states that patients from high deprivation groups report feeling more vulnerable to chest pain due to strong family histories and a sense of identification with high risk stereotypes. This coupled with poorer health status and other significant medical conditions as well as low expectations of aging and longevity was more prevalent in the high compared with the low deprivation patients. The low deprivation patients, in contrast, reported higher expectations of health care and positive health care experiences. A further contrast between the high and low deprivation patient groups was personal connections and rapport between patient and doctor. The low deprivation patient groups were more likely to have connections to the medical profession, or to have had privileged access to healthcare and more extensive knowledge share within the consultation than the high deprivation patient groups. The high deprivation patient groups also reported more feelings of being at fault for the occurrence of their health problems due to health behaviour and poor lifestyle choices. These experiences impact on the communication and the decisions that are made in the consultation setting and may be explained by perceptions of control and perceived empathy.

In *Voices of Medicine and Lifeworld* (Mischler 1984), Mischler argued that within the medical context the health provider maintains control of the consultation through ‘the voice of medicine’. This voice is scientific in nature and does not take account of the patient’s life world, which is the meanings and questions that the patient attaches to their health concerns. Mischler’s theory within the context of the current data suggests that the low deprivation groups perceive empathy in consultations where they control the flow of communication, and the health provider’s desire to structure the consultation is only implied. However, the high deprivation group respond better to a consultation that explicitly invites information through prompting and discussion of social and emotional concerns. Mischler suggests that communication in a ‘voice of the life world’ is more human and that more effective medicine can take place in an empathic, warm, sharing setting (Barry et al. 2001; Chantal 2009; van Dulmen 2011).

These findings also imply that GPs in the high deprivation group had to work harder on ‘emotional labour’. This is an idea that was not considered during the literature review process. However, it was found that more consultation time in the high compared with the low deprivation groups was spent discussing the management of social and emotional

problems. This brings with it additional work for the practitioner as well as stress (Mercer and Watt 2007). The idea of ‘emotional labour’ is discussed by Larson et al (Larson and Yao 2005), who writes that doctors consider empathy to be ‘emotional labour’ (i.e. management of experiences and displayed emotions to present a certain image). The rationale behind emotional labour is that one party, in this case the doctor, by adopting display rules that dictate the expression of certain emotions to accompany specific situations, can present an empathic presence in the consultation. Figure 31 is adapted from Davis’s Theory (Davis 1996) of emotional labour, and summarizes the process of empathy and outcomes that patients and doctors are likely to experience.

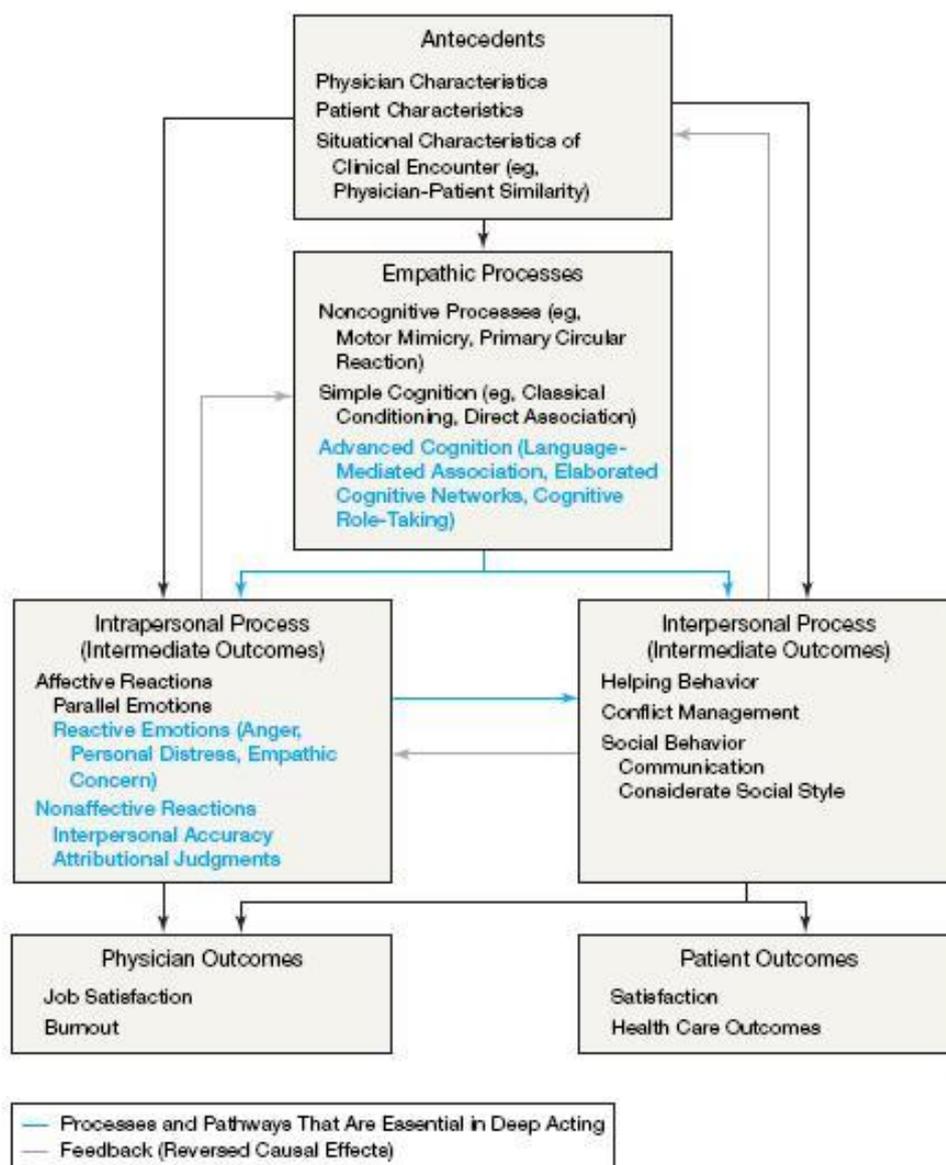


Figure 31: Diagram of Emotional Labour adapted by Larson (Larson and Yao 2005) from Davis (Davis 1996)

In the model (Figure 31), doctors are expected to be empathic caregivers. They must engage in emotional labour through deep acting (i.e. generating empathy) during empathic interactions with the patients, as well as surface acting (i.e. forging empathic behaviour). Although deep acting is preferred, doctors can rely on surface acting when understanding of the patient's emotional situation is not possible (Larson and Yao 2005). 'Deep acting' refers to the act of creating a greater connection between the doctor and the patient; this involves the doctor altering their emotional state to identify with the patient's need and experience. 'Surface acting' refers to a developed technique wherein the doctor mimics the correct

behaviour to match the patient's emotional response. Larson et al (Larson and Yao 2005) conclude that empathy is positively related to doctor satisfaction.

The findings indicate that the patient-practitioner relationship is enhanced by perceived empathy and patient enablement, and therefore are in agreement with other similar studies (Mercer et al. 2012; Price et al. 2006). The patients who reported feeling more enabled were also likely to be more satisfied and to report better health outcomes from the consultation (Mercer et al. 2012). However, deprivation is not the only factor which affects empathic communication within the consultation. The amount of time the patient is afforded to discuss their concerns in the consultation, as well as the patient and practitioner agenda, are all topics within the literature that have been cited as influences of empathy on clinical practice (Langewitz et al. 2002).

12.2.1.1 Patient Agenda

The results in the current thesis showed that the observed communication can be influenced by implicit factors. The results in chapter 8 specifically showed that the low deprivation group were more than twice as likely to present their beliefs about their health complaint (health knowledge) and received more feedback (evaluation feedback) from their GPs about their current treatment within the consultations. Another factor that influences the type of consultation communication that is undertaken includes the patient's perception of their GPs empathy, as well as what the patient hopes to achieve or gain from the consultation i.e. the patient's agenda.

Levenstein et al (Barry et al. 2000; Levenstein et al. 1986) introduced the concept of agendas as the key to understanding the patient. They found that doctors fail to elicit 54% of patients' reasons for consulting and 45% of their concerns. Patients' agendas can include information on symptoms, diagnosis, and theories about symptoms, illness fears, wanted and unwanted actions, self treatment and emotional and social issues (Barry et al. 2000).

The amount of time spent on the patient's agenda is difficult to quantify. It is important that the practitioner sets aside an appropriate amount of time to address the patient's agenda, as unvoiced agendas are associated with adverse outcomes, such as misunderstanding of

diagnosis, not revealing that the prescriptions may be unwanted, not reporting side effects or problems with adherence to Self-Management Support (Barry et al. 2000; Britten et al. 2000). Campion et al (Campion et al. 1992) repeated that social and emotional agendas are the most likely issues to be under-represented in the consultation.

The difference between voiced and unvoiced agendas relates to the degree of freedom the patient is afforded to present themselves within the consultation (Barry et al. 2000). In the consultation, the patient is often subject to limited autonomy, in that the patient requests help and information rather than coming to the consultation with the solution to the problem. Outside the consultation, the patient is considered by those who know them in their full context, in terms of the social and emotional resources as well as in terms of their opinions and ideas. The difference suggests that in the clinical setting the patient is considered as a purely biomedical entity (Barry et al. 2000). There is also literature that suggests that patients from low deprivation groups tend to seek biomedical help, whereas patients from high deprivation groups tend to seek out more bio-psycho-social help (Del Piccolo et al. 2004; Fiscella 1999).

To make the most of the consultation, a more complete picture of the patient's agenda is preferable. This can be achieved through better communication strategies, the successful employment of empathy (Ackermann 1996), active listening (Murray et al. 1994) and consideration of the patient's social and emotional resources (Deveugele et al. 2002).

12.2.1.2 Practitioner Agenda

The patient agenda is not the only agenda within the consultation setting. Practitioner agendas, unlike the patient agenda, move between biomedical and bio psychosocial demands. This process of the practitioner agenda was seen in chapter 8. The results showed that there was significantly more structuring of the consultation, as well as discussions on information relating to health promotion. It was also shown that more discussions on patient smoking and drinking status took place in the high deprivation areas.

The doctor's agenda is to use the time within the consultation to address the 'medical' factors such as arranging procedures or filling out prescriptions. One reason for mismatch of agendas is that practitioners may feel a greater sense of satisfaction with consultations involving

simple achievable agendas (Winefield et al. 1995). Another explanation for mismatched agendas is that the complexity of patient expectations makes it difficult to define the patient's 'total agenda' (Barry et al. 2000). This issue is compounded by practitioners' tendency to overestimate the extent to which patients are primarily concerned with medical treatment (Barry et al. 2000). A further argument is that neither practitioners nor patients are open to the fuller agenda. The practitioner resists the fuller agenda in some situations due to lack of confidence to deal with complex need, seeing it as overly time consuming and emotionally draining. In the meanwhile, the patient worries about wasting the practitioner's time with inappropriate issues (Barry et al. 2000).

Another restraint for the practitioner is competing time pressures on consulting time. First, the time constraint of the individual consultation and secondly, external time pressure, for example the Quality and Outcomes Framework whereby the practitioner is incentivised to structure the agenda to gain biomedical information (The NHS Information Centre 2009). These competing agendas within consultations contribute to the challenges faced in establishing and maintaining the patient-practitioner relationship. A solution to this could be affording more time within the consultation to establishing empathic communication and rapport between the patient and practitioner. Empathic communication would allow the patient to present more information that can be noted and acted upon by the practitioner.

This form of communication would combine 'evidence based medicine', in the form of the practitioner's agenda, to seek biomedical information on which to make a diagnosis and 'patient-centred medicine' in which the needs and preferences of the patient's perspective come together (Bensing 2000; Byrne and Long 1976). By combining these strategies, the gap between 'evidence based' and 'patient-centred' medicines would be diminished. This approach would improve the consultation experience for the patient and practitioner alike.

Communication and Health Outcomes

Literature on the positive effects of empathy and Self-Management Support has shown that effective patient-practitioner communication can have an effect on patient outcomes (Stewart 1995). A study by Shaw et al (Shaw et al. 2011) showed that patient centred communication was associated with improved patient adherence and perceptions of their health status. Shaw et al (Shaw et al. 2011) repeat that, in general, patients prefer a balance between psychosocial

and biomedical discussion within the consultation which allows for the opportunity to ask questions. This balance is especially pertinent to patients who suffered long term conditions (Shaw and Dobson 1988). Shaw et al acknowledge that not all health providers will adopt a discussion style that highlights psychosocial problems and concerns within the early stages of the patient's course of treatment, but instead opt for procedural information and biomedical information until a more solid patient practitioner relationship is formed (Shaw and Dobson 1988). However, the authors highlight the importance of adapting a communication style in which the GP is direct with the patient and gains the information in a timely manner so as to avoid delays in the patient's health recovery (Shaw et al. 2011).

12.2.1.3 Authenticity

Communication's impact on health outcomes is also subject to the perception of authenticity, which in turn is important to maintaining the patient-practitioner relationship. Unlike taught or learned communication styles, the concept of authenticity or genuineness can be detected through the practitioner or patient's tone of voice, and the emotions they present through the story they convey to the listener. Authenticity is also important to empathic communication. Traux et al (Traux et al 1966) suggest that empathy is only effective when accompanied with genuineness and warmth. Despite their finding that empathy, warmth and genuineness are highly interconnected, their work also discovered that each factor can vary independently within the clinic setting. The study concluded that all 3 conditions combined, as well as genuineness and empathy alone, are the optimal conditions for therapeutic outcomes (Traux et al 1966).

Ecological Fallacies

The analysis of the consultations also considered the high and low deprivation patient groups in terms of their practice's SIMD status. It is, however, possible that there were 'ecological fallacies' or exceptions within the practice populations. For example, there may have been patients from more deprived groups in less deprived practices, and vice-versa'. The effect of this, if large, would be to reduce actual SIMD differences between groups. This may also affect patterns of consulting, i.e. the GP may wish to alter their style of communication depending on how enabled the patient feels and how actively they wish to be included in the

decision making process. This effect, if present, was not large and acted against the study findings.

Coding measure design

The measures of empathy within the consultation i.e. the Verona System of Emotional Cues and Concerns as well as the Consultation and Relation Empathy (CARE) measure were used in their original form and in their entirety throughout the thesis. However, Self-Management Support (including Anticipatory Care) was measured using combination codes from the Davis Observation Code (DOC).

The author made use of new combination codes to measure Self-Management Support and Anticipatory Care as there is a dearth of quantitative measure to address these terms, despite their use in current Scottish Government policies. The use of combination codes resulted in two new coding categories that would code Self-Management Support and Anticipatory Care on the basis of the codes that were selected. This may have resulted in some subtle incidents of Self-Management or Anticipatory Care not being coded by the author.

However, the combination codes were selected on the basis that their meanings matched the criteria for Self-Management Support and Anticipatory Care accurately and in line with the definitions found in the literature that informed the working definitions of the thesis. The author also had the benefit of seeing the whole videoed consultation and is of the opinion that the proxy measures used were a valid and comprehensive method of measuring Self-Management Support and Anticipatory Care in the absence of a specific coding scheme for this purpose.

Videoed Consultations origin

The videoed consultations were originally recorded for a study looking at verbal and non-verbal communication. As a result of this, the participating GPs may have concentrated more effort into the consultation dialogue than other aspects of the consultation.

Also, the thesis can only draw conclusions from the practice, patients and GPs who agreed to participate in the previous study. Some information was gathered on non-responding patients, and the results showed that the responding and non responding patients were similar, with the exception that the non-responders tended to be slightly younger and reported feeling less enabled. More details on these findings were discussed in Appendix F.

Empathy: dangerous or desirable?

Empathy is not seen by all as a positive addition to the consultation. MacNaughton's work (MacNaughton 2009) queries the definition of empathy in clinical practice and its use as a measure of physician skill. MacNaughton's (MacNaughton 2009) concerns over the definition and measurement of empathy stem from medicine's historical tendency to regard the patient as an object whose components of physical being and psychological state can be broken down and assessed. Empathy requires the physician to have an understanding of the patient's subjective experience and to clearly display this understanding, which MacNaughton argues is both undesirable and unachievable in the clinical context (MacNaughton 2009).

More recently, MacNaughton (MacNaughton and Carel 2012) has written about perspectives in the clinical encounter in the form of the doctor's objective and subjective viewpoint. Traditionally, the doctor would take an objective and active approach in the consultations structuring the consultations, responding empathically and using diagnosis and decision making to decide on further action. This traditional stance sees the patient as the subject, experiencing pain and discomfort. However, MacNaughton (MacNaughton and Carel 2012) suggests that the doctor must move between the objective and the subjective viewpoints. This oscillation would acknowledge the unique duality of the human body that both subjectively experiences and can be experienced by others as an object. It also can create a sharing viewpoint between the patient and the doctor, introducing the doctor or a second-person perspective that puts the doctor in the patient's shoes, improving the communication exchange between patient and practitioner. This recognition of each other's subjectivity reduces the distance between the viewpoints of the patient's illness as pathology (doctor's

viewpoint) and illness as a way of being (patient's viewpoint) and bridges the contrasting perspectives that present in the clinic.

Differences of opinion on the role of empathy in clinical settings have also been expressed by Rogers (Rogers 1961) and Buber (Buber 1937). Rogers advocates a person centred approach wherein the practitioner displays congruence, empathy and unconditional positive regard and considers all three aspects as being crucial to effective therapeutic engagement and effectiveness. On the other hand Buber suggests that empathy is impossible in a therapeutic situation due to a mismatch in perspectives. This suggestion that one person meets the other in terms of a conceptualisation or type, as 'doctor' and 'patient', and therefore a full experience of mutual understanding is not possible. Midgley (Midgley 2001) adds to this idea, arguing that clinicians attempt to 'atomise' patients both physically and psychologically while simultaneously being expected to relate to them as a complete entity. This, Midgley (Midgley 2001) points out, requires multiple shifts in perspective within a single consultation.

These differences of opinions on empathy's role within the consultation do not take into account perceptions of empathy, which is a separate concept entirely. An individual's normative beliefs or perceptions of behaviours, such as how empathic they believe their GP to be, are influenced over time by the patient's experience of empathy, sympathy and other behaviours shown by significant others such as family, friends and peer groups. The experience the patient has within these relationships influences the patient's intentions which are, in turn, predictors of behaviour (Arozen et al. 2003). Therefore if the patient believes that their GPs level of empathy will either aid or inhibit the consultation behaviour, this will in turn affect the patient's perception of how empathic their GP is.

Self-Management Support has also come under criticism by sceptics who question its role and suitability within the consultation, as well as the extra pressure it puts on the GP (Mercer et al, 2009). Brycroft and Tracey (2006) have criticised Self-Management Support for the implication of agency on the part of the patient, wherein the patient believes in their own self-efficacy or ability to take on the management of their own health. This idea of agency is more likely in low deprivation and more challenging in high deprivation groups.

Self-Management Support (including Anticipatory Care) in practice

Self-Management Support plays an important role in the general practice consultation both in terms of patient enablement and subsequent health outcomes (Mercer and Watt 2007; Neumann et al. 2009). Self-Management Support within the current study tended to focus more on recording the patient's smoking status or weight than discussion of behaviour change opportunities. The recording of the patient's smoking and weight are undertaken as part of the Quality and Outcomes Framework or as a result of the health complaint the patient has attended to discuss rather than as part of an anticipatory approach to patient care.

12.2.1.4 Self-Management Support and Long Term Conditions

The concept of Self-Management Support has also been considered as a method of managing long terms or chronic conditions. Self-Management Support is one element of the Chronic Care Model (Wagner et al. 2001), but the only element that involves direct interaction between the practitioner and patients living with chronic conditions (Packer et al. 2012). In a recent study looking at the Self-Management of diabetes, Packer et al (Packer et al. 2012) found that Self Management Support was more likely to be subscribed to by those patients who 'actively engaged' and felt empowered to make health choices. These findings suggest that self-efficacy plays an important role in making Self-Management Support strategies work.

12.2.1.4.1 Self-efficacy

Self-efficacy is "the belief in one's capabilities to organize and execute the courses of action required to manage prospective situations" (Bandura 1977). Bandura (Bandura 1977) described it as the beliefs and determinants of how people feel, think and behave. In the literature self-efficacy has been related to patient enablement that can benefit patients with long term conditions (Mead et al. 2002; Bandura 1977). This idea suggests that Self-Management Support should improve patient enablement, however, the current study did not find this. A reason for contradictory findings could be a lack of self-efficacy in the patient population studied.

Patient enablement is associated with the doctor's interpersonal communication skills, such as taking an interest in the patient's life, health promotional tasks, and having a positive approach (Pawlikowska et al. 2010; Mercer et al. 2008; Ozvacic et al. 2008; Price et al. 2006). The current findings found that observations of discussion on family information and counselling were low within consultations, which may result in patients feeling less equipped to undertake Self-Management of their conditions due to unvoiced concerns relating to family issues or psycho-social needs.

12.2.1.5 What are the dangers of Self Management Support and Anticipatory Care?

Health promotion has limitations and dangers to be considered. Not all patients are equipped physically or mentally to undertake responsibility for their own care, and therefore this type of intervention may not be suitable or only possible with a lot of carer support. This is also true of Anticipatory Care, which requires professional discretion when applied in a general practice setting. Some conditions that require very specialist care may not be suited to Self-Management Support, as the stage and type of disease must be carefully understood before self care or Self-Management Support is considered.

Other social and personal difficulties may restrict the extent of self care and Self-Management Support, including learning difficulties, literacy problems and domestic circumstances (Chapple and Rogers 1999; Institution of healthcare improvement 2005). These, or a combination of the above noted difficulties, may restrict the patient so much that the additional pressure of self care would be exacerbate the patient's condition.

Another danger of Self-Management may be feelings of guilt experienced by the individual patient. Some patients may feel that they should be able to cope (Jeranta et al. 2004) or that it is shameful or too distressing for them to seek assistance in managing their own health. This feeling can also extend to family, friends and significant others of the patient, who do not want to hinder the patient's recovery by questioning the patient's ability to cope and recover (Jeranta et al. 2004).

Finally, Self-Management has the potential to widen health inequalities. The use of Self-Management systems require patients to cope with their own health problems. However, as Tudor Hart's (Tudor Hart 1971) use of the Inverse Care Law pointed out, those who need the help most will be the population least likely to be served. Mercer and Watt's paper (Mercer and Watt 2007) showed that the problems of access to health care are most prominent within deprived areas. Health care needs often include multi-morbidities, such as psychological and chronic health problems as well as long term illness. The increased need may therefore strain resources, and the patient's ability to access such opportunities, which would in turn affect the patient's ability to self-manage their own health. This is arguably coupled with a mismatch in the high and low deprivation patients' readiness to take on Self-Management Support responsibilities as discussed previously as agency. Moreover, the process of getting the patient to the destination of being able to decide if they wish to take on Self-Management of their condition can involve varying challenges and communication between the high and low deprivation patient groups that might not have been picked up by the observed activity in the analysis of the videoed consultations in the current thesis.

12.3 Evaluation of the study

This section considers the key areas of the study including: opportunities the thesis presented, the coding methods and measures, strengths and limitations and the value this research has added to general practice consultation research.

Opportunities

Videoed general practice consultations provide a rare opportunity to study the content and process of the GP consultation. The thesis used this opportunity to analyze the consultation process alongside output data on GP CARE scores (GP levels of empathy as perceived by their patients), patient enablement and health outcome data. The use of measures of empathy, patient enablement and health outcome data in itself is not novel. However, the use of these measures alongside the Davis Observation Code and the Verona Coding definitions of Emotional Sequences for Cues and Concerns (Verona-CoDES-CC) in their original forms

with added elements to measure the presence of Self-Management Support and Anticipatory Care is a novel feature of this thesis.

Moreover, the thesis compared patients from high and low deprivation groups. This element of the research provided a further opportunity to compare and contrast differing groups, thanks to the diversity of the data set. Although replication of the work in this thesis is feasible, the practicalities of achieving similar quality and quantity of data again would be time consuming. To make best use of this rare and resource intensive opportunity, this thesis used a number of methods of analysis.

12.4 Reflections on the Dataset

The decision to use the dataset in the thesis and the research questions themselves stemmed from a combination of the work and recommendations made by the previous study by Mercer et al (2012) and the author's background and interest in empathy through the study of Psychology. The data used in the thesis was available prior to the thesis opportunity being created, and the research questions stemmed from its availability.

Context

The database of videoed patient consultations and patient rated measures in General Practice were recorded in a previous study by Mercer, Watt and Little (Mercer et al. 2012) that looked at verbal and non-verbal communication in consultations in high and low deprivation groups. The previous study had found when exploring verbal and non-verbal communication that patients' perception of GP empathy as captured by the CARE Measure is important for outcomes in both deprived and less deprived settings. The previous study also concluded that empathy was a core value of general practice and was important to patient satisfaction and some health outcomes. These health outcomes use an Anticipatory Care approach to interventions like Self-Management Support.

Reflections

The availability of such a rich dataset was an important factor that provided some initial research objectives about the role of empathy to health outcomes and patient satisfaction. However, the process of taking this idea and forming research questions was a gradual process undertaken as a result of reading the literature currently available on the concept of empathy and general practice, as well as examining its relationship to health promotional activities in primary care, such as Self-Management Support and Anticipatory Care.

The research questions aimed to fill gaps in what was known about empathy and explore it in UK general practice setting. As the data provided consultations from general practices that were considered representative of both high and low deprivation areas, the potential differences in terms of need and service provision between these two groups were also considered. The idea of differences between high and low deprivation areas also related to current Scottish Government health care objectives on tackling health inequalities through primary care.

In hindsight, the availability of the consultation data defined a lot of the questions that were asked in the thesis, as did the experiences of my supervisors' input from their previous research and their general research interests. It would have been interesting to collect my own data with the research objectives in mind. This alternate data set could have aimed to follow a smaller cohort of patients over a longer period of time to track the establishment, development and challenges that might have arisen within the patient's relationship with their GP. It would also have allowed for Self-Management to be measured over time which would have provided not just a measure of how often Self-Management and Anticipatory Care is discussed in routine general practice consultations, but also an insight into the varying forms it can take. Also, the experience that the author now has in coding consultations and conducting her own research could have been applied more actively in the initial stages of the project. This would have allowed the author to shape the angle of research and outline the steps to achieve its successful completion.

12.5 Reflections on the Coding Process

The author went to great lengths to ensure and maintain high standards of inter-rater reliability and to avoid coder bias. The author of the thesis acted as a coder on both the Verona and Davis datasets as well as a transcriber of the consultations for the Verona coding system and was afforded a deep working knowledge of the consultations and their content. This depth of working knowledge was helpful when applied to the coding frameworks. As the author became more familiar with the coding material, the insights from the transcription phase of the coding work assisted my ability to locate topics within the videos with ease.

The time spent interacting with the videos has also proved beneficial when seeking examples of coding decisions to present in written work or for conference presentations. These insights into the context of each coding decision has been a valuable experience to the author, not only in terms of coding decisions, but also in order to develop a genuine understanding of the content of routine general practice consultations. The experience also provided an insight to the varying demands made of general practice consultation time, and the general practitioners themselves. The idea of understanding communication in context became increasingly important when coding decisions were being made. The coding schemes used both in my thesis, and in other communication research, focus on individual utterances and the responses that are directly provided to them by the health provider. However, when viewing the consultation in its entirety individual utterances may be interpreted in a number of ways by the coder, the patient and the practitioner, depending on the view point and when considered alongside the activities and topics undertaken in the consultation.

This has taught the author that communication in general practice consultation is very important to the health care that the patient can access. It may go some way to explain the individual patient's level of satisfaction, perception of empathy and how they measure their symptom severity.

Use of secondary data

The current study used secondary data to explore the relationship between empathy, Self-Management Support and Anticipatory Care. The use of secondary data in research is not uncommon, the merits and limitations of its use are discussed below.

Merits

The use of secondary data can provide methodological advantages to the new area of research (Smith, 2008). The main advantage of previously obtained data is arguably access and timing. The author of the thesis gained time that would have otherwise been spent organising and collecting the data to clean and review the data for the current study. This process saw the financial and time costs of data collection being incurred by the originator of the data. The analysis of the secondary data was completed in association with the originators of the data which provided scope for context to be provided added as the interpretation process developed (McQueen, 2006).

Pitfalls

However, the use of secondary data is not without its limitations. One such limitation is that the data has been collected for the purposes of another piece of research. The danger in this method is that the data are inaccurate or subject to errors, and that information pertinent to the research topic is either not available or not available in sufficient quantities (McQueen, 2006). The use of secondary data can also produce questions surrounding the data's reliability and how well it fits the questions it is trying to address. There is the danger that the data that has been gathered will be in a different format to what is required by the current study. However, this was not the case, as the thesis has acted to build on what was known about communication in general practice consultations. This fact has also addressed potential pitfalls, such as permission to use previously collected data. Also, the age of the data was within 3 years of its initial collection when the current study began, meaning that there was minimal danger that the results taken from its analysis would be outdated (Smith, 2008).

Value of new consultation data

This process provided a unique advantage point for the author, in that having watched all the consultation videos, the content of the consultations became very familiar, which was useful

for drawing an overall sense of the data alongside comparisons based on the statistical analysis.

A central strength of the study was the diverse socio-economic status of the participant population. This strength provided the opportunity for the author to compare the health challenges faced in high and low deprivation groups.

The comparison of high and low deprivation groups provided scope to measure the effects of empathy and Self-Management Support (including Anticipatory Care). This comparison acted to determine who might benefit from these forms of health promotional activity, those who live in areas of higher deprivation or those who live in lower deprivation areas.

The work carried out in the thesis adds to the understanding of the Inverse Care Law that is discussed in Mercer and Watt's paper (Mercer and Watt 2007). Their work looked at the inputs and outputs, but not the process of the consultation. The current thesis used methods and measured that capture both the communication as well as the consultation tasks that are routinely undertaken in primary care.

Coding methods and measures

12.5.1.1 Davis Observation Code

As mentioned previously, the use of the Davis Observation Code and the Verona Emotional Sequences for Cues and Concerns (Verona-CoDES-CC), in their original forms with added elements to measure the presence of Self-Management Support and Anticipatory Care is a novel feature of the thesis.

The use of the Davis Observation Code provided an effective way of measuring what tasks were undertaken in general practice consultations. However, the Davis system did not capture elements of the consultation that were subtle, such as work the doctor may have been doing on the computer that was not verbalized. Additional codes were added by the author, in association with the other coders, to acknowledge this and other tasks that were not captured

by the original Davis codes that were relevant to a UK general practice consultation. Despite these additions some elements of the consultation were not coded.

The Davis system is not specifically designed to capture the amount of Self-Management Support (including Anticipatory Care) and therefore the author grouped Davis codes together to address this objective. The results show that the amount of Self-Management Support (including Anticipatory Care) was low. The low levels of data could be the result of the grouped codes technique. However, no other method of capturing Self-Management Support or Anticipatory Care data was available and the codes selected were considered the best match to Self-Management Support and Anticipatory Care in a general practice setting.

An alternative reason for the low amounts of coded Self-Management Support and Anticipatory Care may be the result of the videoed consultations being recorded between 2006-2008, which is when the Quality and Outcomes Framework was established in Scottish general practice. This frame work prompted some doctors to ask for and record information on patients relating to domains consisting of a set of achievement measures, known as indicators, against which practices score points according to their level of achievement.

12.5.1.2 Verona coding system

The use of the Verona-CoDES-CC (Del Piccolo et al. 2009) system provided an opportunity for the author to learn a new coding system that had previously only been used within the medical settings in secondary care (Vatne et al. 2010; Del Piccolo et al. 2004; Zimmermann et al. 2011). The thesis applied Verona to a larger number of consultations than had previously been studied in this way in the entire research literature. The work also provided the opportunity for the Verona coding data as an objective measure of empathy to be analysed alongside patient rated measures of perceived GP empathy in the form of the CARE measure (Mercer et al. 2004).

The reason this objective measure was used in the thesis was that it explored whether a patient's perception of empathy differed from how empathy was observed. It also determined whether observed or perceived empathy was related to different discussion topics within the consultation setting consultation topics that would then facilitate the use, where appropriate of Self-Management Support and Anticipatory Care approaches.

This approach undertaken in the thesis added to a body of knowledge on patients' perceptions of empathy in the consultation. The addition of the observer's measure of empathy provides an opportunity to explore any reasons for a mismatch in perspectives, or subtle examples of empathy or other discussions which build rapport between the patient and practitioner and can facilitate Self-Management Support. The number of high and low deprivation consultations that were explored in the thesis also provided one of the largest comparisons of data for high and low deprivation patient groups in a general practice setting. The use of the Verona coding system in the thesis has seen it applied to the biggest sample of consultations using the coding system in its entirety compared with currently published literature. It is also the first study to explore the coding system on a Scottish general practice patient population.

The Verona system takes into account both verbal and non-verbal forms of communication. To use the Verona system, the author had to transcribe all the consultations which was a time exhaustive task. However, the time invested in this task afforded the author an in-depth understanding of what had been said alongside the non-verbal behaviours visible in the videos to inform coding decisions.

For example, the Verona system did not take into account the effect of disruptions to the conversation such as interruptions during the consultation by practice staff or telephone calls which can lead to repetition of cues and concerns. Also, the coding system does not differentiate its coding process when more than one patient is present in the consultation. A study using the Verona coding system has shown that the presence of more than one patient, or a patient and significant other in the consultation setting, can affect the number of cues or concerns discussed (Oguchi et al. 2010). In the current study the number of consultations of this nature was relatively low.

Multiple Testing

Due to the nature of the thesis data, multiple tests were employed to analyse the content of consultations. This naturally led to multiple testing of the data. Multiple testing refers to any instance that involves simultaneous testing of more than one hypotheses or set of data (Romano et al. 2000). Multiple testing is important to ensure that the results being discussed

within the data set are not the result of other confounding variables; however, this technique is also subject to error.

The key issue with multiple testing is the production of false positive significant results due to the increased chance produced when testing multiple variables i.e. the 5% level is used resulting in a chance that 1 in 20 of the findings are false positives. However, if a 1% level is used, then the odds are reduced to a 1 in 100 chance that the findings are false positives. This way of correcting the possibility of multiple testing errors is referred to as the Bonferroni correction (Bland and Altman 1995).

In the Verona chapter, Cues and Health Provider Responses were measured at each level and tested against a list of confounding variables. This was a lengthy process that took into account the patient's age, gender, SMID status, multiple morbidity (MM) status, and patients who consulted with emotional problems. Despite the multiple testing employed, the findings were consistent. Arguably a larger sample size would have been beneficial to enhance the precision of the results to a general practice population. Bender et al (Bender and Lange 2001) argue that multiple testing in biomedical research is complex and involves difficulties in applying the standard situations to a 'real world' setting. Bender et al (Bender and Lange 2001) found that often standard tests are not adequate to test several levels of multiplicity.

However, there is value to be gained from undertaking multiple testing, as it provides a useful tool to ensure valid statistical inference. Multiple testing when employed to confirm a clearly defined family of tests and conclusions provides a method of testing that is robust (Bender and Lange 2001). The application of multiple testing procedures also enables the author to conclude which tests are significant, or otherwise, and control for an appropriate rate of error (Bender and Lange 2001). Multilevel modelling also accounts for clustering affects that widen the confidence intervals and therefore decrease the significance of some of the relationships.

12.5.2 Multi-level Modelling

Multi-level modelling was considered as part of the analysis process in the thesis. Multi-level models are particularly appropriate for research designs where the data for participants is organized at more than one level (i.e. nested data) (Centre of Multilevel Modelling 2012). The use of multilevel modeling as a method of analysis for multiple groups and factors is

becoming increasingly common in medical research literature. A limitation of the thesis is that the current study did not employ this method, due to the additional time and expertise required to learn this level of analysis to a proficient level. Future work using this data would benefit from the use of multi-level modelling to improve the proficiency of testing groups of patients across more than one level of variables.

12.6 Conclusions and Recommendations

This thesis has highlighted the importance of empathic communication in general practice consultations. Altering the style of communication to meet the individual patient's need is vital to improve and challenge the patient-practitioner relationship, and gain a better understanding of the patient's health beliefs. It has also been found that patients in high and low deprivation settings use different criteria by which they judge their GP's empathy.

Self-Management Support (including Anticipatory Care) is not routinely discussed in general practice consultations, nor was it related to Patient Enablement within the current study. However, Anticipatory Care was associated with improvement in some health outcome measures. In the long term, the use of empathic communication alongside health improvement measures holds the key to improving illness outcomes, and improving well-being.

12.7 Implications for practice policy & future research

Policy & Practice

In terms of policy, empathy has been discussed alongside ideas of holism (House of Lords, 2000; The National Medical Advisory Committee 1996) by both the Scottish and UK governments. These policies have promoted the positive effects that multi-disciplinary approaches can bring to the patient-practitioner encounter. The policies do not mention patient expectation and perceptions of empathy, which in terms of the current thesis are shown to vary between the high and low deprivation groups. This difference should be acknowledged by future policies using the term empathy.

However, Self-Management Support and Self-Care have been discussed in terms of their outcomes on increased patient satisfaction with care, well-being, better health outcomes and improved functioning within the patient's life (Department of Health 2009). These outcomes vary according to patient, need, and condition. There are some Self-Management Support policies and initiatives currently in place in association with the NHS. These include *Delivering for Health* (2005) (Scottish Executive Health Department 2005), and 'Guan Yersel' (2008) (The Long Term Conditions Alliance Scotland 2008). Other initiatives involve Anticipatory Care such as the 'Keep Well' initiative (Scottish Executive Health Department 2005) (formally Prevention 2010). Policies like these have come under criticism by health providers for misinterpreting the origins of terms like Self-Management Support and Anticipatory Care. These critics also raise concerns over discrepancies made between policy and practice. One such discrepancy in a national project: the Keep Well initiative (Scottish Executive Health Department 2005) aimed at reducing inequalities in cardiovascular disease by increasing the rates of health improvement undertaken among those deemed as high risk is that to reach groups living in the most deprived areas the solutions are complex and expensive. The Keep Well initiative used a screening method of Anticipatory Care to actively identify patients in high risk groups for specific conditions. This method is different from that of the current thesis, which measured Anticipatory Care in routine consultations as part of ongoing care plans and everyday general practice consultations. Furthermore, patients' experiences of Keep Well have not yet been sought to assess the impact from the patient's point of view. Neither the level of the patients' adherence nor, more importantly, the scope of the intervention's impact is clear. This approach would require observational data of the patient practitioner relationship within the primary care setting which would be time consuming and expensive (Tudor Hart 1988).

A practical implication of the findings suggest that Self-Management Support services which encourage people to take decisions and make choices that improve their health, well-being and improve health-related behaviours should take into account differences in patient expectations and willingness to become more active in their health management. Self-Management strategies that are effective in low deprivation groups may not work as well in high deprivation groups. Importantly, the results of the current thesis have shown that practitioners should be sensitive to their patient groups' expectations of the topics and the tasks that will be carried out within the consultation setting, as mismatched expectations can have a negative impact of the patient's perception of their practitioner.

This idea of consultations being sensitive to patient expectations, as well as patient experience, is shared by the Self-Management Support strategy 'Guan Yersel' (The Long Term Conditions Alliance Scotland 2008). This strategy was developed by the Long Term Conditions Alliance Scotland in association with the Scottish Government in 2008, with an aim to develop a Self-Management strategy informed by the experiences of those with long term condition. It aims to provide patients with access to high quality information about their condition and how it will impact on their lives as well as peer support, especially for those patients who require emotional and mental health support. These aims hope to achieve a culture of partnership, with the NHS, the voluntary sector and local authorities working together to provide care partnerships which address the needs of people with long term conditions.

Future Research

The volume and quantity of the data in the thesis provides a rare opportunity to examine both the communication and tasks undertaken in a general practice consultation. Furthermore, the thesis uses a relatively new method of coding sequences of emotional cues, concerns and health provider responses in the form of the Verona coding system. Its use alongside the Davis Observation Code has produced a study that may not be repeatable in terms of quality and quantity of videoed consultation data, the time necessary to collect, code and analyse such data, and the opportunity to use recently developed communication coding system alongside more established tools. The value of this thesis, however, lies in its contribution to knowledge of the consultation process in general practice

In terms of future research, the Davis Observation Code (DOC) could be used on a specific type of consultation. For example, consultations focusing on physical concerns only. This would allow further studies to determine if there are differences in the types of topics discussed and the tasks carried out in different types of consultations.

With regard to the Verona Coding definitions of Emotional Sequences for Cues and Concerns (Verona-CoDES-CC) (Del Piccolo et al. 2009). Future research could involve analyses of sequences of consultations, in order to measure if patterns of Cues lead to trends in Health

Provider Responses over a series of meetings between the same patients and practitioners, or for certain types of consultations (i.e. emotional compared with physical complaints). This would provide an insight into how patient-practitioner rapport is formed, maintained and challenged.

The nature of this thesis is that it illuminates the consultation process in a descriptive and partly analytical manner. It has discussed empathy and Self-Management Support (including Anticipatory Care) by comparing and contrasting their roles in high and low deprivation general practice consultations, as well as providing analysis and reflection of the author's knowledge gained through its process.

On a final note, this study has highlighted the importance of general practice based research that takes into account high deprivation populations. Collectively, the thesis provides, to the author's knowledge, one of the largest studies of general practice consultation content that is linked to health outcomes in the UK. Although the findings are not surprising, they provide conjecture of the general practice consultation process. The findings relating to Anticipatory Care and Self-Management Support show that both are not routinely discussed in general practice consultations. However, when discussion on Anticipatory Care takes place, it tends to be in high deprivation groups. This is arguably evidence of reactive care aimed at higher levels of smoking and social problems associated with higher deprivation groups. These findings also relate to the Verona results, wherein perceptions of empathy in the form of more cues and concerns being discussed in the consultations were more often associated with the high deprivation group. These results imply that future training and policies should acknowledge the differences in the amount of emotional workload that GPs working in high deprivation areas will encounter.

References

- Ackermann, E. K. Perspective-taking and object construction. Pages 25-37 in Y. R. M. Kafai, ed. *Constructionism in practice: Designing, Thinking and Learning in a Digital World*. Lawrence Erlbaum Associates, New Jersey, 1996.
- Adams, K., Greiner, A.C., Corrigan, J.M. *Crossing the Quality Chasm: A New Health System for the 21st Century*, the National Academies Press, Washington, 2001.
- Agledahl, K. M., Gulbrandsen, P., Forde, R., Wifstad, A. Courteous but not curious: how doctors' politeness masks their existential neglect. A qualitative study of video-recorded patient consultations. *Journal of Medical Ethics*, 2011; 37(11):650-4.
- Alliance of Self-Care Research. What is Self-Care? 2012. Available at: <http://www.nhs.uk/Planners/Yourhealth/Pages/Whatisselfcare.aspx> (Accessed: 07/01/13).
- American Academy of Family Physicians. Health Promotion and Disease Prevention; Recommended Curriculum Guidelines for Family Medicine Residents. St. Mary's Family Medicine Residency Program. Columbia. 2010. Available at: <http://www.aafp.org/online/en/home/aboutus/specialty/rpsolutions/eduguide.html>. (Accessed: 04/03/13).
- Arozen, E., Wilson, T.D., Akert, R.M. *Social Psychology*. Prentice Hall, New Jersey. 2003.
- Bandura, A. Self-efficacy: Towards a unifying theory of behavioural change. *Psychological Review* 1977; 84(2):191-215.
- Bandura, A. *Social foundations of thought and action; a social cognitive theory*. Prentice Hall, New Jersey. 1986.
- Barry, C. A., Bradley C.P., Britten, N., Stevenson, F.A., Barber, A. Patients' unvoiced agendas in general practice consultations; qualitative study. *British Medical Journal*. 2000; 320 (7244):1246-1250.
- Barry, C. A., Stevenson, F.A., Britten, N., Barber, A., Bradley, C.P. Giving voice to the lifeworld. More humane, more effective medical care? A qualitative study of doctor-patient communication in general practice. *Social Science and Medicine*. 2001; 53 (4):487-505.
- Beaudoin, C., Lussier, M.T., Gagnon, R.J., Brouillet, M.I., Lalande, R. Discussion of lifestyle-related issues in family practice during visits with general medical examination as the main reason for encounter: An exploratory study of content and determinants. *Patient Education and Counseling*, 2001; 45 (4):275-284.
- Beck, S.R., Daughtridge, R., Sloane, P.D. Physician-patient communication in the primary care office: A systematic Review. *Journal of American Board Family Medicine*. 2002; 15(1): 25-38.

- Bell, K., Cole, B.K. Improving medical students' success in promoting health behavior change: A curriculum evaluation. *Journal of General Internal Medicine*. 2008; 23(9):1503-1506.
- Bender, R. Lange, S. Adjusting for Multiple testing - when and how? *Journal of Clinical Epidemiology*. 2001;54(4):343-349.
- Bensing, J. Bridging the gap: The separate worlds of evidence-based medicine and patient-centred medicine. *Patient Education and Counseling*, 2000; 39:17-25.
- Bertakis, K.D., Azari, R. The Impact of Obesity on Primary Care Visits. *Obesity Research*. 2005; 13(1):1315-1623.
- Bertakis, K.D., Azari, R.A. Patient-centred care is associated with decreased health care utilization. *Journal of the American Board of Family Medicine*. 2011; 24(3):229-39.
- Bertakis, K.D., Azari, R. Determinants and outcomes of patient-centred care. *Patient Education and Counseling*. 2011;85 (1):46-52.
- Bertakis, K.D., Callahan, E.J. A comparison of initial and established patient encounters using the Davis Observation Code. *Family Medicine*. 1992; 24(4):307-311.
- Bertakis, K.D., Roter, D., Putnam, S.M. The relationship of physician medical interview style to patient satisfaction. *Journal of Family Practice*. 1991; 32(2): 175-181.
- Bird, J., Cohen-Cole, S.A. The three function model of the medical interview: and educational device. In: Hale, M.S. *Methods in teaching consultation-liaison psychiatry*. Basel: S Karger AG, 1990:65-88.
- Blakeman, T., Bower, P., Reeves, D., Chew-Graham, C. Bringing self-management into clinical view: a qualitative study of long-term condition management in primary care consultations. *Chronic Illness*. 2010; 6(2): 136-150.
- Bland, J. M., Altman, D.G. Multiple significance tests: the Bonferroni method. Department of Public Health Sciences, St George's Hospital Medical School, London. *British Medical Journal*. 1995; 21: 310(6973): 170.
- Boren, S.A., Wakefield, B.J., Gunlock, T.L., Wakefield, D.S. Heart failure self-management education: a systematic review of the evidence. *International Journal of Evidence-Based Healthcare*. 2009; 7(3):159-168.
- Bower, P., Gask, L., May, C., Mead, N. Domains of consultation research in primary care. *Journal of Patient Education and Counselling*. 2001; 45(1):3-1.
- British Columbia Ministry of Health. *Self-Management Support: A Health Care Intervention*, Crown Publications, Victoria: British Columbia. 2011. Available at: <https://docs.google.com/file/d/1geSooG4ALAb-bj6XFYZFfMRpumZxegxaeL2yCB-yZQdqdlz8vFZxcMbwhQql/edit?usp=sharing>. (Accessed: 04/03/13).

- Britten, N., Stevenson, F.A., Barry, C.A., Barber, N., Bradely, C.P. Misunderstanding in prescribing decisions in general practice: a qualitative study. *British Medical Journal*. 2000; 320(7244): 1246-50.
- Brotons, C., Bjorkelund, C., Bul, M., Ciurana, R., Godycki-Cwirko, M., Jurgova, E., Kloppe, P., Lionis, C., Mierzechi, A., Pieiro, R., Pullerits, L., Sammut, M.R., Sheehan, M., Tataradze, R., Thireos, E.A., Vuchak, J. Prevention and health promotion in clinical practice: the views of general practitioners in Europe. *Preventive Medicine*. 2005; 40 (5):595-601.
- Brown, J. D., Stewart, M., Ryan, B.L. Assessing communication between patients and physicians: The measure of patient-centred communication (MPCC). Thames Valley Family Practice Research Unit and Centre for Studies in Family Medicine. 2001. Working Paper Series, Paper # 95-2, Second Edition. Available at: www.uwo.ca/fammed/csfm/publications/working_papers.htm. (Accessed 04/03/13).
- Brown, M., Friedli, L., Watson, S. Prescriptions for pleasure. *Mental Health Today*. 2004. Available at: www.ncbi.nlm.nih.gov/pubmed/15709611. (Accessed 04/03/13).
- Brycroft, J. J., Tracey, J. Self-Management Support: a win-win solution for the 21st century. *New Zealand Family Practice*; 2006: 33(4): 243-248.
- Buber, M. I and Thou, (translated) in Smith, R.G., Edinbrugh, R., Clark, T. eds. Scribners, New York. 1937.
- Butow, P.N., Dunn, S.M., Tattersall, M.H.N., Jones, Q.J. Computer-based interaction analysis of the cancer consultation. *British Journal of Cancer*. 1995; 71(8), pp. 1115–1121.
- Bylund, C.L., Gueguen, J.A., D'Agostino, T.A, Imes, R.S., Sonet, E. Cancer patients' decisions about discussing internet information with their doctors. *Psycho-Oncology*. 2009; 18(11):1139-1146.
- Byrne, P. S, Long, B.E.L. Doctors talking to patients. A study of the verbal behaviour of general practitioners consulting in their surgeries. Her Majesty's stationary office, London, UK. 1976.
- Callahan, J., Bertakis, K.D. Development and validation of the Davis Observation Code. *Family Medicine*. 1991; 23(1), 19-24.
- Campbell, S.M., Han, M., Hacker, J., Burns, C., Oliver, D., Thapar, A., Mead, N., Safran, S.G., Roland, M.O. Identifying predictors of high quality care in English General Practice: Observational study. *British Medical Journal*. 2001; 323(7316):784-789.
- Campbell, S.M., Roland, M.O., Buetow, S. Defining quality of care. *Journal of Social Science and Medicine*. 2000; 51(11):1611-1625.
- Campion, P. D., Butler, N. M., Cox, A.D. Principle agendas of doctors and patients in general practice consultations. *Family Practice*. 1992; 9(2): 181-90.

- Carnwell, R., Daly, W.M. 2003. Advanced nursing practitioners in primary care settings: an exploration of the developing roles. *Journal of Clinical Nursing*. 2003; 12(5):630-42.
- Cawston, P., Mercer, S., Barbour, R. Involving deprived communities in improving the quality of primary care services: does participatory action research work? *BMC Health Services Research*. 2007;18(7): 88.
- Cawston, P. GPs at the Deep End Series; Social prescribing in very deprived areas. *British Journal of General Practice*. 2011; 61(586): 350.
- Cegala, D. J., McClure, L., Marinelli, T.M., Post, D.M. The effects of communication skills training on patients' participation during medical interviews. *Patient Education and Counseling*. 2001; 41(2):209-222.
- Centre of Multi level Modelling. Multi Level Modelling. Graduate School of Education, Bristol Institute of Public Affairs, University of Bristol. 2012. Available at: <http://www.bris.ac.uk/cmm/>. (Accessed: 07/01/13).
- Chapple, A., Rogers, A. `Self-care' and its relevance to developing demand management strategies: a review of qualitative research. *Health & Social Care in the Community*. 1999; 7(6):445-454.
- Cohen, J. A Coefficient of Agreement for Nominal Scales. *Educational and Psychological Measurement*. 1960; 20:37-46.
- Coleman, T., Stevenson, K., Wilson, A. Using content analysis of video-recorded consultations to identify smokers' "readiness" and "resistance" towards stopping smoking, *Patient Education and Counselling*. 2000; 41(3): 305-311. Available at: <http://www.sciencedirect.com/science/article/pii/S0738399199001056>. (Accessed 07/05/13).
- Connor, M., Fletcher, I., Salmon, P. The analysis of verbal interaction sequences in dyadic clinical communication: A review of methods, *Patient Education and Counselling*. 2009; 75(2): 169-177.
- Corbett, M., Foster, N., Ong, B.N. Text GP attitudes and self-reported behaviour in primary care consultations for low back pain. *Family Practice*. 2009; 26(5): 359-364.
- Coyle, M. A., Mayleben, D.B., Henderson, D.W., Watkins, L.S., Haumann, M.L., Wilson, B.K. Objective assessment of cough over a 24-hour period in patients with COPD. *American Journal of Respiratory and Critical Care Medicine*. 2009; 169:A606.
- Davis, M. H. *Empathy: A Social Psychological Approach*. Westview Press, Boulder, Colorado.1996.
- De Haes, H. Dilemmas in patient-centredness and shared decision making: A case for vulnerability. *Patient Education and Counseling*. 2006; 62 (3):291-298.
- De Luisignan, S., Kumarapelia, P., Chan, T., Pflug, B., van Vlymen, J., Jones, B., Freeman, G.K. The ALFA (Activity Log Files Aggregation) Toolkit: A method for precise observation of the consultation. *Journal of Medical Internet Research*. 2008;10(4): e27.

- Dent, E., Brown, R., Dowsett, S., Tattersall, M., Butow, P. The Cancode interaction analysis system in the oncological setting: reliability and validity of video and audio tape coding. *Journal of Patient Education and Counselling*. 2005; 56(1);Pages 35-44.
- Del Piccolo, L., Finset, A., Zimmermann, C. Verona coding definitions of emotional sequences (VR-Codes): Cues and concerns manual. 2009. Available at: <http://www.each.nl/verona-coding-systems>. (Accessed: 07/01/13).
- Deber, R. B., Kraetschmer, N. I. J. What roles do patients wish to play in treatment decision making? *Archives of Internal Medicine*. 1996; 156(13):1414-1420.
- Del Piccolo, L., Putnam, S.M., Mazzi, M.A., Zimmermann, C. The biopsychosocial domain Available and the functions of the medical interview in primary care: construct validity of the Verona Medical Interview Classification System. *Patient Education and Counseling*. 2004; 53(1):47-56.
- Department of Health. Self-Care - a real choice: Self- Care Support - a practical option. 2005; 1-12. Available at: http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_4100717. (Accessed: 07/01/13).
- Department of Health. Research evidence on the effectiveness of self care support (work in progress 2005-07). 2007. Available at: <http://www.scie-socialcareonline.org.uk/profile.asp?guid=f998b3fd-041f-4ede-abf9-a83d2ddb90bf>. (Accessed: 07/01/13).
- Department of Health; Skills for Care. Common core principles to support self-care: a guide to support implementation. A joint Skills for Care (UK) and Skills for Health (UK) initiative. 2008. Available at: http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_084505. (Accessed: 07/01/13).
- Department of Health. 'Your health, your way - a guide to long term conditions and self care' for social care professionals. 2009. Available at: http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_109466. (Accessed: 07/01/13).
- Derksen, F., Bensing, J., Lagro-Janssen, A. Effectiveness of empathy in general practice: a systematic review. *British Journal of General Practice*, 2013; 63(606); e76-e84.
- Deveugele, M., Derese, A., De Maeseneer, J. Is GP-patient communication related to their perceptions of illness severity, coping and social support? *Social Science & Medicine*. 2002; 55 (7):1245-1253.
- DiMatteo, M., Taranta, A., Friedman, H., Prince, L. Predicting patient satisfaction from physicians nonverbal communication skills. *Medical Care*. 1980; 18(4):367-386.
- Dodds, F., Rehair-Brown, A., Parsons, S. A systematic review of randomized controlled trials that attempt to identify interventions that improve patient compliance with prescribed antipsychotic medication. *Clinical Effectiveness in Nursing*. 2002; 4(2):47-53.

- Eide, H., Eide, T., Rusten, T., Finset, A. Patient validation of cues and concerns identified according to Verona coding definitions of emotional sequences (VR-CoDES): A video- and interview-based approach. *Patient Education and Counseling*. 2010; 82 (2):156-162.
- Eide, H., Sibbern, T., Egeland, T., Finset, A., Johannessen, T., Miaskowski, C., Rustoen, T. Fibromyalgia patients' communication of cues and concerns: interaction analysis of pain clinic consultations. *Clinical Journal of Pain*. 2011; 27(7):602-610.
- Eide, H., Sibbern, T., Johannessen, T. Empathic accuracy of nurses' immediate responses to fibromyalgia patients' expressions of negative emotions: an evaluation using interaction analysis. *Journal of Advanced Nursing*. 2011; 67(6):1242-1253.
- Elwyn, G., Edwards, A., Wenxing, M., Hood, K., Atwell, C., Grol, R. Shared decision making: developing the OPTION scale for measuring patient involvement. 2003. *Quality and Safety Health Care*; 12(2):93-99.
- Epstein, R.M., Franks, P., Shields, C.G., Meldrum, S.C., Miller, K.N., Campbell, T.L., Fiscella, K. Patient-centred communication and diagnostic testing. *Annals of Family Medicine*. 2005; 3(5): 415-421.
- Fiscella, K. Is lower income associated with greater biopsychosocial morbidity? Implications for physicians working with underserved patients. *Journal of Family Practice*. 1999; 48 (5):372-377.
- Fiscella, K., Goodwin, M.A., Kurt, C., Stange, M.D. Does Patient Educational Level Affect Office Visits To Family Physicians? *Journal of the National Medical Association*. 2002; 94(3):157-165.
- Flies, J. L. *Statistical Methods for Rates and Proportions*. 3rd Edition. Wiley, New York. 1981.
- Ford, S., Hall, A., Ratcliffe, D., Fallowfield, L. The Medical Interaction Process System (MIPS): an instrument for analysing interviews of oncologists and patients with cancer. *Journal of Social Science & Medicine*. 2000; 50(4); 553-566.
- Gale, N., Greenfield, S., Gill, P., Guttridge, K., Marshall, T. Patient and general practitioner attitudes to taking medication to prevent cardiovascular disease after receiving detailed information on risks and benefits of treatment: a qualitative study. *BMC Family Practice*. 2011; 12(1): 59.
- Gale, N., Marshall, T. Starting and staying in preventive medication for cardiovascular disease. *Current Opinion in Cardiology*. 2012; 27(5): 533-541.
- Glasgow R.E. Perceived barriers to self-management and preventive behaviours. *DCCP Cancer Control Research*. 2004. Available at: <http://cancercontrol.cancer.gov/brp/constructs/barriers/>. (Accessed: 07/01/13).
- Glasgow, R. E., Davis, C.L., Funnell, M.M., Beck, A. Implementing practical interventions to support chronic illness self-management. *Joint Commission Journal on Quality and Safety*. 2003; 29(11): 563-574.

- Glasgow, R. E., Emont, S., Miller, D.C. Assessing delivery of the five 'As' for patient-centred counseling. *Health Promotion International*. 2006; 21(3): 245-255.
- Glasgow, R. E., Stycker, L.A. Preventive care practices for diabetes management in two primary care samples. *American Journal of Preventive Medicine*. 2000; 19(1): 9-14.
- Glasgow, R. E., Whitesides, H., Nelson, C.C., King, D.K. Use of the Patient Assessment of Chronic Illness Care (PACIC) with diabetic patients: relationship to patient characteristics, receipt of care, and self-management. *Diabetes Care*. 2005; 28(11): 2655-2661.
- Greenfield, S., Kaplan, S.H., Ware, J.E., Yano, E.M., Frank, H.J. Patients' participation in medical care: effects on blood sugar control and quality of life in diabetes. *Journal of General Internal Medicine*. 1988; 3(5): 448-457.
- Grossman, P., Wilhelm, F.H., Spoerle, M. Respiratory sinus arrhythmia, cardiac vagal control, and daily activity. *American Journal of Physiology-Heart and Circulatory Physiology*. 2004; 287(2): H728-H734.
- Hall, J. A., Roter, D.L., Katz, N.R. Meta-Analysis of Correlates of Provider Behavior in Medical Encounters. *Medical Care*. 1998; 26(7): 657-675.
- Hart, J.T. Clinical and economic consequences of patients as producers. *Journal of Public Health Medicine*. 1995;17(4): 383-386.
- Henbest R.J, Stewart M. Patient-centeredness in the consultation 2: Does it really make a difference? *Family Practice*. 1990;7(1):28-33.
- Hilde, E., Quera, V., Graugaard, P., Finset, A. Physician-patient dialogue surrounding patients' expression of concern: applying sequence analysis to RIAS. *Social Science & Medicine*. 2004; 59(1): 145-155.
- Hojat, M. Ten Approached for enhancing empathy in Health and Human Services Cultures. *Journal of Health and Human Services Administration*. 2009; 31(4): 412-450.
- Hojat, M., Gonnella, J.S., Nasca, T.J., Mangione, S., Veloksi, J.J., Magee, M. The Jefferson Scale of Physician Empathy: further psychometric data and differences by gender and specialty at item level. *Academic Medicine*. 2002; 77(10 Supplement):S58-S60.
- Hojat, M., Mangione, S., Nasca, T.J., Cohen, M., Gonnella, J.S., Erdmann, J.B., Veloski, J., Magee, M. The Jefferson Scale of Physician Empathy: Development and Preliminary Psychometric Data. *Educational and Psychological Measurement*. 2001; 61(2); 349-65.
- House of Lords. Complementary and alternative medicine. The Stationary Office, London. 2000. Available at: <http://www.parliament.the-stationery-office.co.uk/pa/ld199900/ldselect/ldsctech/123/12301.htm>. (Accessed 04/03/13).
- Howie, J. G. R., Heaney, D.J., Maxwell, M., Walker, J.J. A comparison of a Patient Enablement Instrument (PEI) against two established satisfaction scales as an

- outcome measure of primary care consultations. *Family Practice*. 1998; 16(2):165-171.
- Howie, J. G. R., Heaney, D., Maxwell, M. Quality, core values and the general practice consultation: issues of definition, measurement and delivery. *Family Practice*. 2004; 21(4):458-468.
- Howie, J. G. R., Heaney, D., Maxwell, M., Walker, J.J., Freeman, J.K., Rai, J. Quality at general practice consultations: cross sectional survey. *British Medical Journal*. 1999; 319: 738-743.
- Howie, J.G., Porter, A.M., Heaney, D.J., Hopton, J.L. Long to short consultation ratio: a proxy measure of quality of care for general practice. *British Journal of General Practice*. 1991; 41(343): 48-54.
- Hung, D. Y., Shelley, D.R. Multilevel analysis of the chronic care model and 5A services for treating tobacco use in urban primary care clinics. *Health Services Research*. 2009; 44(1):103-127.
- Institute of Healthcare Improvement. 2005. Self-Management Support: Summary of Chronic Care Model. Available at: http://www.improvingchroniccare.org/index.php?p=self-management_support&s=39. (Accessed 04/03/13).
- Ísterlund Efrainsson, E., Klang, B., Larsson, K., Ehrenberg, H., Fossum, B. Communication and self-management education at nurse-led COPD clinics in primary health care. *Patient Education and Counseling*. 2009; 77(2): 209-217.
- Ishikawa, H., Yano, E., Fujimori, S., Kinoshita, M., Yamanouchi, T., Yoshikawa, M., Yamazaki, Y., Teramoto, T. Patient health literacy and patient-physician information exchange during a visit. *Family Practice*. 2009; 26(6): 517-523.
- Jefferson, G. Glossary of transcript symbols with an introduction. Pages 13-31 in G. H. Lerner, ed. *Conversation Analysis: Studies from the first generation*. John Benjamins, Amsterdam/Philadelphia. 2004.
- Jeranta, A. F., von Friederichs-Fitzwaterb, M.M., Moorec, M. Patients' perceived barriers to active self-management of chronic conditions. *Patient Education and Counseling*. 2004; 57: 300-307.
- Jeung, C., Braun, L.T. Bandura's Self-Efficacy Theory: A Guide for Cardiac Rehabilitation Nursing Practice. *Journal of Holistic Nursing*. 1994; 12(4): 425-436.
- Kaplan, S.H., Greenfield, S. Assessing the effects of physician-patient interactions on the outcomes of chronic diseases. *Journal of Medical Care*. 1989; 27(supplement): 110-127.

- Kehler, D., Bo, C., Torsten, L., Christensen, M.B., Edwards, A., Risor, M.B. Cardiovascular-risk patients' experienced benefits and unfulfilled expectations from preventive consultations: a qualitative study. *Quality in Primary Care*. 2008; 16(5): 315-325.
- King, D., Glasgow, R.E., Toobert, D., Strycker, Estabrooks, P., Osuna, D., Faber, A. Self-efficacy, problem solving, and social-environmental support are associated with diabetes Self-Management behaviors. *Diabetes Care*. 2010; 33(4): 751-753.
- Kinmonth, A.L., Woodcock, A., Griffin, S., Spiegel, N., Campbell, M.J. Randomised control trial of patient centred care of diabetes in general practice: impact on current well-being and future disease risk. *British Medical Journal*. 1998; 317(7167): 1202–1208.
- Kinnersley, P., Stott, N., Peters, T.J., Harvey, I. The patient-centeredness of consultations and outcomes in primary care. *British Journal of General Practice*. 1999; 49(446): 711–716.
- Langewitz, W., Denz, M., Keller, A., Kiss, A., Ruttiman, W. B. Spontaneous talking time at start of consultation in outpatient clinics: cohort study. *British Medical Journal*. 2002; 325(7366): 682-683.
- Larson, E. B., Yao, X. Clinical empathy as emotional labour in the patient-physician relationship. *The Journal of the American Medical Association*. 2005; 293(9):1100-1.
- Lewis, D.K., Barton, S. Who decides when to start preventive treatment? A questionnaire survey to compare the views of different population subgroups. *Journal of Epidemiology Community Health*. 2003; 57(4): 241-242.
- Levenstein, J. H., McCracken, H.E., McWhinney, I.R., Stewart, B., Brown, J.B. The patient centred clinical method; a model for the doctor patient interaction in family medicine. *Family Practice*. 1986; 3(1): 24-30.
- Little, P., H. Everitt, I. Williamson, G. Warner, M. Moore, C. Gould, K. Ferrier, P. Peduzzi, Payne, S. Observational study of effect of patient centredness and positive approach on outcomes of general practice consultations. *British Medical Journal*. 2001; 323 (7318): 908-911.
- Lorig, K. R., Halstead, H.R. Self-Management Education: History, Definition, Outcomes, and Mechanisms. *Annals of Behavioural Medicine*. 2003; 26(1): 1-7.
- Lorig, K. R., Mazonson, P.D., Holman, H.R. Evidence suggesting that health education for self-management in patients with chronic arthritis has sustained health benefits while reducing health care costs. *Arthritis and Rheumatism*. 1993; 36(4): 439-446.
- Lundstrom, L., Hyldborg, A., Johnsen, A. T., Lone, R., Petersen, M.A., Groenvold, M. Cross-sectorial cooperation and supportive care in general practice: cancer patients' experiences, *Family Practice*. 2011; 28(5): 532-540.

- Mackay, D. F., Sutton, M., Watt, G.C.M. Deprivation and volunteering by general practices: cross sectional analysis of a national primary care system. *British Medical Journal*. 2005; 17: 331(7530): 1449-1451.
- Maguire, P., Faulkner, A. Improve the counselling skills of doctors and nurses in cancer care. *British Medical Journal*. 1988 (Oct); 297(6652): 847-849.
- MacNaughton, J. The art of medicine: the dangerous practice of empathy. *The Lancet*. 2009; 373(9675): 1940-1941.
- Mjaaland, A., Trond, A., Finset, A. Frequency of GP communication addressing the patient's resources and coping strategies in medical interviews: a video-based observational study. *Journal of BMC Family Practice*. 2009(10): 1471-2296.
- Makinen, S., Lauri, T.S. Self-care in adults with asthma: How they cope. *Journal of Clinical Nursing*. 2000; 9(4): 557-565.
- Makoul, G., Arnston, P., Schofield, T. Health promotion in primary care: physician-patient communication and decision making about prescription medications. 1995. *Journal of Social Science Medicine*; 41(9): pp1241-1254.
- Marvel, M. K., Epstein, R.M., Flowers, K. Soliciting the Patient's Agenda: Have we improved? *The Journal of the American Medical Association*. 1999; 281(3): 283-287.
- May, C., Montori, V.M., Mair, F. We need minimally disruptive medicine. *British Medical Journal*. 2009; 339: b2803.
- McCormack, L. A., Williams-Piehot, P.A., Bann, C.M., Burton, J., Kamerow, D.B., Squire, C., Fisher, C., Brownson, C.E., Glasgow, R.E. Development and validation of an instrument to measure resources and support for chronic illness self-management. *The Diabetes Educator*. 2005; 43(5): 436-444.
- MacNaughton, J., Carel, H. The art of medicine "How do you feel?": oscillating perspectives in the clinic. *The Lancet*. 2012; 379(9834): 2334-2335.
- McQueen, R. A., Knussen, C. *Introduction to research methods and statistics in Psychology*. Pearsons Education Ltd. United Kingdom. 2006.
- McWhinney, I.R. General Practice as an academic discipline. *Lancet*. 1966, 19(1:7434): 419-423.
- Mead, G.H. *Mind, self and society*. Chicago: University of Chicago Press; 1934.
- Mead, N., Bower, N. Patient-centeredness: a conceptual framework and review of the empirical literature. *Journal of Social Science and Medicine*. 2000; 51(7): 1087-110.
- Mead, N., Bower, P. Measuring patient-centeredness: a new comparison of three observation-based instruments. 2000. *Patient Education and Counselling*, 39: 71-80.

- Mead, N., Bower, P., Hann, M. The impact of general practitioners' patient-centredness on patients' post-consultation satisfaction and enablement. *Social Science & Medicine*. 2002; 55(2): 283-299.
- Mead, N., Bower, P., Roland, M. Factors associated with enablement in general practice: cross-sectional study using routinely-collected data. *British Journal of General Practice*. 2008; 58(550): 346-352.
- Mehrabian, A. *Non-verbal communication*. Aldine Atherton Incorporated. Chicago. 1972.
- Mercer, S. W., Jani, B.D., Maxwell, M., Wong, S. Y. S., Watt, G. C. M. Patient enablement requires physician empathy: a cross-sectional study of general practice consultations in areas of high and low socioeconomic deprivation in Scotland. *BMC Family Practice*. 2012; 8(13), 6.
- Mercer, S. W., Watt, G.C.M. The Inverse Care Law: Clinical primary care encounters in deprived and affluent areas of Scotland. *Annals of Family Medicine*. 2007; 5(6): 503-510.
- Mercer, S. W., Watt, G. C. M., Little, P. Verbal and non-verbal communication in the consultation, patients' rating of quality, and subsequent outcomes in general practice in areas of high and low deprivation. 2012. (Submitted for publication).
- Mercer, S. W., Watt G.C.M., Wyke, S., Guthrie, B., MacKenzie, A. Living well with multiple morbidity: the development and evaluation of a primary care-based complex intervention to support patients with multiple morbidities. The Scottish School of Primary Care. 2010. Conference paper.
- Mercer, S. W., Cawston, P., Bikker, A.P. Quality in general practice consultations; a qualitative study of the views of patients living in an area of high socio-economic deprivation in Scotland. *BMC Family Practice*. 2007; 19(8): 22.
- Mercer, S. W., Fitzpatrick, B., Gourlay, G., Vojt, G., McConnachie, A., Watt, G.C.M. More time for complex consultations in a high-deprivation practice is associated with increased patient enablement. *British Journal of General Practice*. 2007; 57(545): 960-966.
- Mercer, S. W., Howie, J.G.R. CQI-2 - a new measure of holistic interpersonal care in primary care consultations. *British Journal of General Practice*. 2006; 56(525): 262-268.
- Mercer, S. W., Maxwell, M., Heaney, D., Watt, G.C.M. The consultation and relational empathy (CARE) measure: development and preliminary validation and reliability of an empathy-based consultation process measure. *Family Practice*. 2004; 21(6): 699-705.
- Mercer, S. W., McConnachie, A., Maxwell, M., Heaney, D., Watt, G.C.M. Relevance and practical use of the Consultation and Relational Empathy (CARE) Measure in general practice. *Family Practice*. 2005; 22(3): 328-334.

- Mercer, S. W., Reilly, D., Watt, G.C.M. The importance of empathy in the enablement of patients attending the Glasgow Homoeopathic Hospital. *British Journal of General Practice*. 2002; 52(484): 901-905.
- Mercer, S. W., Reynolds, S. Empathy and quality of care. *British Journal of General Practice*. 2002; 52(Suppl): S9-S12.
- Mercer, S. W., Wirtz, M., Fitzpatrick, B., Vojt, G. General practitioner empathy, patient enablement, and patient-reported outcomes in primary care in an area of high socio-economic deprivation in Scotland - A pilot prospective study using structural equation modeling. *Patient Education and Counseling*. 2008; 73(2): 240-245.
- Midgley, M. *Science and Poetry*. Routledge, London. 2001.
- Mischel, W. *Personality and Assessment*, London, Wiley, 1968.
- Mischler, E. G. *The discourse of medicine. The dialectics of medical interviews*. Norwood, USA. 1984.
- Morse, J. M., Anderson, G., Bottorff, J.L., Yonge, O., O'Brien, D., Solberg, S.M., Mcilveen, K.H. Exploring empathy: a conceptual fit for nursing practice? *Journal of Nursing Scholarship*. 1992; 24(4): 273-280.
- Mullen, P. D., Mains, P.A., Velez, R. A meta-analysis of controlled trails of cardiac patient education. *Patient Education and Counselling*. 1992; 19(2): 143-162.
- Murray, S. A., Tapson, J., Turnbull, L., McCallum, J., Little, A. Listening to local voices: adapting a rapid appraisal technique to assess health and social needs in a general practice. *British Medical Journal*. 1994; 308(6930): 698-700.
- Neumann, M., Bensing, J., Mercer, S.W., Ernstmann, N., Ommen, O., Pfaff, H. Analyzing the "nature" and "specific effectiveness" of clinical empathy: A theoretical overview and contribution towards a theory-based research agenda. *Patient Education and Counseling*. 2009; 74(3): 339-346.
- NHS Scotland. Anticipatory Care (Pt.1): An Interview with Dr Julian Tudor Hart. NHS Scotland. 2008. Available at: <http://www.youtube.com/playlist?list=PLBC304886E7B36345>. (Accessed: 06/03/13).
- NHS Scotland. Measuring deprivation: Scottish Index of Multiple Deprivation (SIMD). 2012. Available at: <http://simd.scotland.gov.uk/publication-2012/>. (Accessed: 06/03/13).
- Oguchi, M., Jansen, J., Butow, P., Colagiuri, B., Divine, R., Dhillion, H. Measuring the impact of nurse cue-response behaviour on cancer patients' emotional cues. *Patient Education and Counseling* . 2010; 82(2): 163-168.
- Oliver, N. A., Goodwin, M.A., Gotler, R.S., Gregory, P.M., Stange, K.C. Time use in clinical encounters: are African American patients treated differently? *Journal of the National Medical Association*. 2001; 93(10): 380-385.
- Ong, L.M.L., de Haes, J.C.J.M., Hoos, A.M., Lammes, F.B. Doctor-patient communication: A review of the literature. *Social Science & Medicine*. 1995; 40(7): 903-18.

- Orlowski, R. A., Hubbard, F., Blasczyk, E. Data processing and statistical adjustment. Cross-Cultural Survey Guidelines. 2010. 2nd Edition. Available at: <http://ccsg.isr.umich.edu/pdf/00FullGuidelines3.pdf>. (Accessed: 06/04/13).
- Ozvacic, A. Z., Katic, M., Kern, J., Lazic, D., Cerovecki, N., Soldo, D. Patient, physician, and practice characteristics related to patient enablement in general practice in Croatia: cross-sectional survey study. *Croatian Medical Journal*. 2008; 49(6): 813-823.
- Packer, T. L., Boldy, D., Ghahari, S., Melling, L., Arsons, R., Borne, R.H. Self-management programs conducted within a practice setting: Who participates, who benefits and what can be learned? *Patient Education and Counseling*. 2012; 87(1): 93-100.
- Paterson, C. Measuring outcomes in primary care: a patient generated measure (MYMOP) compared with the SF-36 health survey. *British Medical Journal*. 1996; 312 (7037): 1016-1020.
- Pawlikowska, T. R. B., Walker, J.J., Nowak, P.R., Szumilo-Grzesik, W. Patient involvement in assessing consultation quality: a quantitative study of the Patient Enablement Instrument in Poland. *Health Expectations*. 2010; 13(1): 13-23.
- Peduzzi, P., Concato, J., Kemper, E., Holford, R., Feinstein, A.R. A simulation study of the number of events per variable in logistic regression analysis. *Journal of Clinical Epidemiology*. 1996; 49(12): 1373-1379.
- Piaget, J. *The moral judgement of a child*. London, Kegan, P., Trench, T & Co. 1932.
- Price, S., Mercer, S.W., MacPherson, H. Practitioner empathy, patient enablement and health outcomes: A prospective study of acupuncture patients. *Patient Education and Counseling*. 2006; 63(1-2): 239-245.
- Reynolds, W. *The measurement and development of empathy in nursing*. Ashgate Publishing Limited, Aldershot. 2000.
- Reynolds, W. Scott, D. Empathy: a crucial component of the helping relationship. *Journal of Psychiatry and Mental Health Nursing*. 1999; 6(5): 363-370.
- Richards, H. M., Reid, M.E., Watt, G.C.M. Socio-economic variations in responses to chest pain: qualitative study. *British Medical Journal*. 2002; 324(7349): 1308.
- Riegel, B., Moser, D.K., Anker, S.D., Appel, L.J. Dunbar, S.B. Grady, K.L., Gurvitz, M.Z., Havranek, E.P., Lee, C.S., Lindenfeld, J., Peterson, P.N., Pressler, S.J., Schocken, D.D., Whellan, D.J. and on behalf of the American Heart Association Council on Cardiovascular Nursing, Council on Clinical Cardiology, Council on Nutrition, Physical Activity, and Metabolism, and Interdisciplinary Council on Quality of Care and Outcomes Research. State of the Science: Promoting Self-Care in Persons With Heart Failure: A Scientific Statement From the American Heart Association. 2009; 120: 1141-1163.
- Rogers, C. W. *Way of Being*. Pages 115-116 Houghton Mifflin, Boston.1980.

- Rogers, C. W. *On becoming a person: a therapist's view of psychotherapy*. Constable, London. 1961.
- Romano, J. P., Azeem, S.M., Wolf, M. *Multiple Testing*. University of Chicago, USA. 2000.
- Roter, D. The roter method of interaction analysis system (RIAS): Utility and flexibility for analysis of medical interactions, *Patient Education and Counselling*. 2000; 46 (4): 243-251.
- Roter D. *The roter method of interaction process analysis*. 2006.
- Roter, D. L., Stewart, M., Putnam, S.M., Lipkin Jr, M., Stiles, W., Nui, T.S. *Communication Patterns of Primary Care Physicians*. *The Journal of the American Medical Association*. 1997; 277(4): 350-356.
- Sakraida, T.J., Robinson, M.V. *Health literacy Self-Management by patients with Type 2 diabetes and stage 3 chronic kidney disease*. *Western Journal of Nursing Research*. 2009; 31(5): 627-647.
- Sandvik, M., Eide, H., Lind, M., Graugaard, P.K., Torper, J., Finset, A. *Analyzing medical dialogues: strength and weakness of Roter's interaction analysis system (RIAS)*. *Patient Education and Counseling*. 2002; 46(4): 235-41.
- Scottish Executive Health Department. *Delivering For Health*. 2005. Available at: <http://www.scotland.gov.uk/Publications/2005/11/02102635/26356>. (Accessed: 06/04/13).
- Scottish Executive Health Department. *Keep well (Formerly known as Prevention 2010)*. 2006. Available at <http://www.healthscotland.com/keep-well/policy-resources.aspx>. (Accessed: 06/03/13).
- Shaw, B. F., Dobson, K.S. *Competency judgements in the training and evaluation of psychotherapists*. *Journals of Consulting and Clinical Psychology*. 1988; 56(5): 666-672.
- Shaw, W. S., Pransky, G., Roter, D.L., Winters, T., Tveito, T.H., Larson, S.M. *The effects of patient-provider communication on 3-month recovery from acute low back pain*. *The Journal of the American Board of Family Medicine*. 2011; 24(1): 16-25.
- Slort, W., Schweitzer, B.P.M., Blankenstein, A.H., Abarshi, E.A., Riphagen, I.I. Ehteld, M.A., Aaronson, N.K., Van der Horst, H.E., Deliens, L. *Perceived barriers and facilitators for general practitioner-patient communication in palliative care: A systematic review*. *Palliative Medicine*. 2011; 25(6): 613-629.
- Simon, C. *The Consultation*. *InnovAiT: Education and Innovation for General Practice*. 2009; 2(2); 113-121.
- Smith, E. *The pitfalls and promises; the use of secondary data analysis in educational research*. *British Journals of Educational Studies*. 2008; 56(3), pp323-339.

- Squier, R. W. A model of empathic understanding and adherence to treatment regimens in practitioner-patient-relationships. *Social Science & Medicine*. 1990; 30 (3): 325-329.
- Stewart, M. Assessing communication between patients and physicians: the measure of patient-centred communication (MPCC). *Patient Centred Medicine: transforming clinical method*. 2001: 269-282.
- Stewart, M. Towards a global definition of patient centred care: the patient should be the judge of patient centred care. *British Medical Journal*. 2001; 322(7284); 444-445.
- Stewart, M. A. Effective physician-patient communication and health outcomes: a review. *Canadian Medical Association Journal*. 1995; 152(9): 1423-1433.
- Stewart, M., Brown, J.B., Donner, A et al. The impact of patient-centred care on outcomes. *Journal of Family Practice*. 2000; 49(9): 796-804.
- Stirling, A.M., Wilson, P., McConnachie, A. Deprivation, psychological distress, and consultation length. *British Journal of General Practice*. 2001; 51(467):456-460.
- Strauss, A. L., Corbin, J.M. *Unending work and care; managing chronic illness at home*. Jossey-Bass Publishers, San Francisco. 1988.
- Street Jr, R. L. Information-giving in medical consultations: The influence of patients' communicative styles and personal characteristics. *Social Science & Medicine*. 1991; 32(5):541-548.
- Street, R.L. Makoul, G., Arora, N., Epstein, R.M. How does communication heal? Pathways linking clinician-patient communication to health outcomes. *Journal of Patient Education and Counselling*. 2009; 74(3); 295-301.
- Stott, N.C.H., Davis, R.H. The exceptional potential in each primary care consultation. *British Journal of General Practice*. 1979; 29(201): 201-205.
- Suchman, A. L., Markakis, K., Beckman, H.B., Frankel, R. 1997. A model of empathic communication in the medical interview. *The Journal of the American Medical Association* 277 (8):678-682.
- The Long Term Conditions Alliance Scotland. 'Gaun Yersel'; The self-management strategy for long term conditions in Scotland. 2008. Available at <http://www.scotland.gov.uk/Publications/2008/10/GaunYersel>. (Accessed: 06/03/13).
- The Mental Health Foundation. *Knowing our own minds: A survey of how people in emotional distress take control of their lives*. Mental Health Foundation, London. 1997.
- The National Medical Advisory Committee. *Complementary medicine and the National Health Service* The Stationary Office, House of Lords, London. 1996.
- The NHS Information Centre. *The quality and outcome framework, NHS*. 2009. Available at <http://www.nice.org.uk/aboutnice/qof/qof.jsp>. (Accessed: 06/03/13).

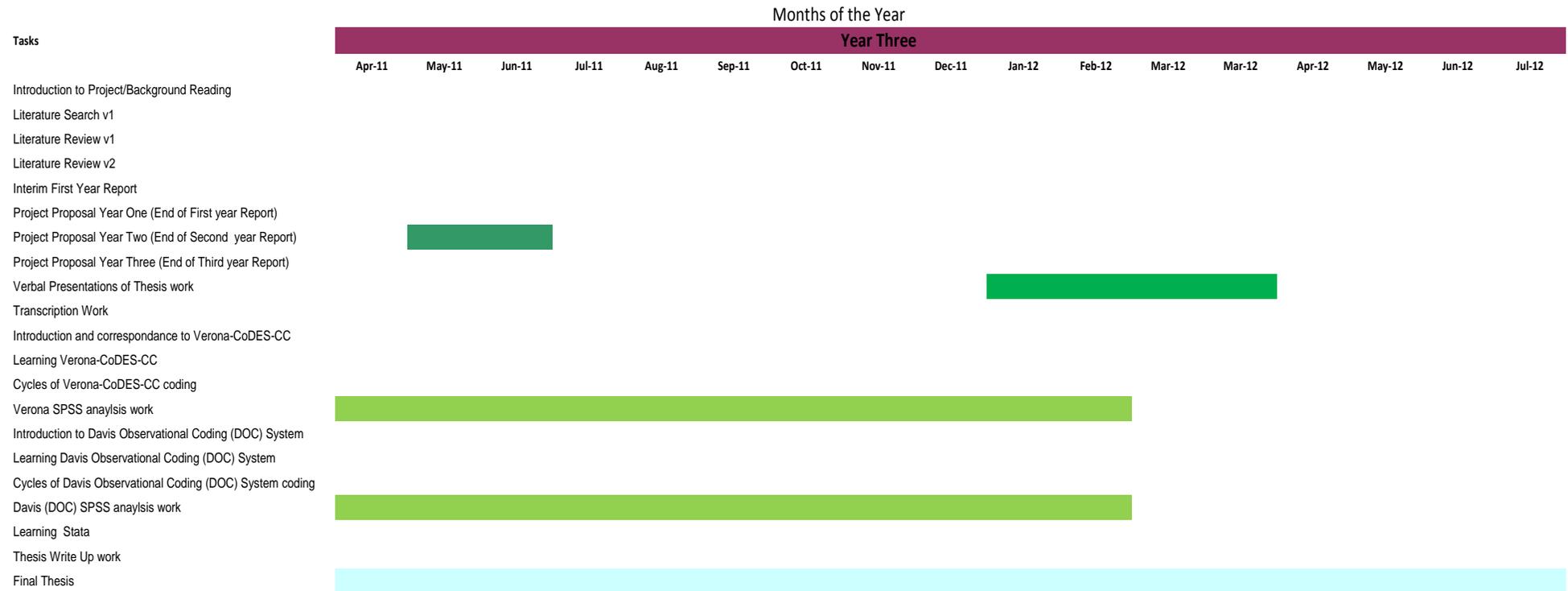
- The NHS Choices. What is Self-Care? 2012. Available at:
<http://www.nhs.uk/Planners/Yourhealth/Pages/Whatisselfcare.asp> (Accessed: 07/01/13).
- The Oxford English Dictionary. Definition of efficacy. Oxford, Oxford University Press. Second Edition. 1989.
- The Oxford English Dictionary. Definition of empathy. Oxford, Oxford University Press. Second Edition. 1989.
- The Oxford English Dictionary. Definition of self care. Oxford, Oxford University Press. Second Edition. 1989.
- The Scottish Government. Local Health Care Co-Operatives - Delivering For Patients In The Community. 2000. Available at:
<http://www.scotland.gov.uk/News/Releases/2000/02/d9ffc70d-7e17-4757-9309-d655a0e08787>. (Accessed: 06/03/13).
- The Scottish Government. Better Health, Better Care: Action Plan. Scotland. 2007. Available at <http://www.scotland.gov.uk/Publications/2007/12/11103453/0>. (Accessed: 06/03/13).
- The Scottish Government. Equally Well: Report of the Ministerial Task Force on Health Inequalities, Health Delivery Directorate Improvement and Support Team, Edinburgh. 2008. Available at
<http://www.scotland.gov.uk/Publications/2008/06/25104032/0>. (Accessed: 06/03/13).
- The Scottish Government. Living and Dying Well: A national action plan for palliative and end of life care in Scotland, Edinburgh. 2008. Available at
<http://www.scotland.gov.uk/Resource/Doc/239823/0066155.pdf>. (Accessed: 06/03/13).
- The Scottish Government. Long Term Conditions Collaborative: Improving Self-Management Support, Health Delivery Directorate Improvement and Support Team, Edinburgh. 2009. Available at
<http://www.scotland.gov.uk/Resource/Doc/274194/0082012.pdf>. (Accessed: 06/03/13).
- The Scottish Government. Anticipatory Care Planning; Frequently Asked Questions. Health Delivery Directorate Improvement and Support Team, Edinburgh. 2010. Available at
<http://www.scotland.gov.uk/Resource/Doc/309277/0097422.pdf>. (Accessed: 06/03/13).
- The Scottish Government. Proactive, Planned and Coordinated: Care Management in Scotland. Edinburgh, Health Delivery Directorate Improvement and Support Team. 2010. Available at <http://www.scotland.gov.uk/Resource/Doc/309283/0097424.pdf>. (Accessed: 06/03/13).
- The Scottish Government. 2010. SPARRA made easy: Guidance developed by Long Term Conditions programme teams from Lanarkshire, Ayrshire and Arran and Greater Glasgow and Clyde in collaboration with ISD Scotland, Health Delivery Directorate Improvement and Support Team, Edinburgh. Available at

- <http://www.scotland.gov.uk/Resource/Doc/309288/0097425.pdf>. (Accessed: 06/03/13).
- Tichener, E. B. *A beginner's psychology*. Macmillan, New York.1915.
- Toljamo, M., Hentinent, M. Adherence to self-care and glycamic control among people with insulin-dependent diabetes mellitus. *Journal of Advanced Nursing*. 2001; 34(6): 780-786.
- Toober, D. J., Hampson, S.E., Glasgow, R.E. The summary of diabetes self-care activities measure. *Diabetes Care*. 2000; 23(7): 943-950.
- Townsend, A., Wyke, S., Hunt, K. Self-managing and managing self: Practical and moral dilemmas in accounts of living with chronic illness. *Chronic Illness*. 2006; 2(3): 185-194.
- Townsend, A., Wyke, S., Hunt, K. Frequent consulting and multiple morbidity: a qualitative comparison of 'high' and 'low' consulters of GPs. *Family Practice*. 2008; 25(3): 168-175.
- Traux et al. Therapist Empathy, Genuineness, Warmth and Patient Therapeutic Outcome. *Journal of Counselling Psychology*. 1966; 30(5): 395-401.
- Truax, C. B., Carkuff, R.R. *Toward effective counselling and psychotherapy: training and practice*. Aldine Atherton, Chicago.1967.
- Tudor Hart, J. The Inverse Care Law. *The Lancet*. 1971; 297(7696): 405-412.
- Tudor Hart, J. *A new kind of doctor*. Merlin Press, London.1988.
- Van Den Dool, C. W. A. *Huisarts en Wetenschap*. Practice and Science Online. 1970; 13: 59.
- van Dulmen, S. The value of tailored communication for person-centred outcomes. *Journal of Evaluating Clinical Practice* . 2011; 17(2): 381-383.
- Vatne, T., Finset, A., Ornes, K., Ruland, C.M. Application of the Verona Coding Definitions of Emotional Sequences (VR-CoDES) on a pediatric data set. *Patient Education and Counseling*. 2010; 80(3): 399-404.
- Vischer, R. Über das optische Formgefühl. Ein Beitrag zur Ästhetik (About the optical form of feeling. A contribution to the aesthetics). *in* Credner, ed. Leipzig. 1873.
- Wagner, E. H. Chronic disease management: what will it take to improve care for chronic illness? *Effective Clinical Practice*. 1998; 1(1): 2-4.
- Wagner, E. H., Austin, B.T., Davis, C., Hindmarsh, M., Schaefer, J., Bonomi, A. Improving chronic illness care: translating evidence into action. *Health Affairs*. 2001; 20(6): 64-78.
- Walter, L. P., Worley, D., Greenhill, P., Rolfe, J.H. What do general practitioners do differently when consulting with a medical student? *Medical Education*. 2009; 43 (3): 268-273.

- Watt G.C.M. GPs at the Deep End. *British Journal of General Practice*. 2011; 61(582): 66-67
- Watt, G. C. M. GPs at the Deep End Series: A social institution base on mutuality and trust. *British Journal of General Practice*. 2011; 61(593): 741.
- Watt, G. C. M. GPs at the Deep End Series: Inventing the wheel in general practice. *British Journal of General Practice*. 2011; 61(592): 685.
- Watt, G. C. M., O'Donnell, C., Sridharan, S. Building on Julian Tudor Hart's example of anticipatory care. *Primary Health Care Research and Development*. 2011; 12(1): 3-10.
- Watt, G. C. M. The inverse care law today. *The Lancet*. 2002; 360(20): 252-254.
- Watt, G. C. M. GPs at the Deep End Series; Anticipatory care in very deprived areas. *British Journal of General Practice*. 2011; 61(584): 228.
- Whitley, R. Gingerich, S.M., Lutz, W.J., Mueser, K.T. Implementing the Illness Management and Recovery Program in Community Mental Health Settings: Facilitators and Barriers. *Psychiatric Services*. 2009; 60(2) :202-209.
- Wilson, P. M. Nurses' responses to expert patients: the rhetoric and reality of self management in long-term conditions: a grounded theory study. *International Journal of Nursing Studies*. 2006; 43(7): 803-818.
- Winefield, H. R., Murray, T.G.C., Clifford, J.V., Farmer, E.A. The usefulness of distinguishing different types of general practice consultation, or are needed skills always the same? *Family Practice*. 1995; 12(4): 402-7.
- Wooliscroft, J. O., Howell, J.D., Patel, B.P. Resident-patient interactions: the humanistic qualities of internal medicine residents assessed by patients, attending physicians, program supervisors, and nurses. *Academic Medicine*. 2004; 69 3): 216-224.
- Zandelt, L.C., Smets, E.M., Oort, F.J., Godfried, M.H., de Haes, C.J.M. Medical specialists' patient-centred communication and patient-reported outcomes. 2007. *Journal of Medical Care*; 45(4): 330-339.
- Zandelt, L.C., Smets, E.M., Oort, F.J., Godfried, M.H., de Haes, C.J.M. Determinants of physicians' patient-centred behaviour in the medical specialist encounters. 2006. *Journal of Medical Care*; 63(4): 889-910.
- Zimmermann, C., Del Piccolo, L., Finset, A. Cues and Concerns by Patients in Medical Consultations: A Literature Review. *Psychological Bulletin*. 2007; 133(3):438-463.
- Zimmermann, C., Del Piccolo, L., Bensing, J., Bergvik, S., De Haes, H., Eide, H., Fletcher, I., Goss, C., Heaven, C., Humphris, G., Kim, Y.M., Langewitz, W., Meeuwesen, L., Nuebling, M., Rimondini, M., Salmon, P., van Dulmen, S., Wissow, L., Zanbelt, L., Finset, A. Coding patient emotional cues and concerns in medical consultations: the Verona coding definitions of emotional sequences (VR-CoDES). *Patient Education & Counseling*. 2011; 82(2):141-148.

Appendix C – Year 3 Project Activity Gantt Chart

PhD Thesis - Project Activity Gantt Chart



Appendix D – Pre and Post Consultation Patient Questionnaire

CONSULTATIONS IN GENERAL PRACTICE

1. How many problems would you like to discuss with the doctor today?

One Two Three or more

2. Would you describe the problem(s) you'd like to discuss with the doctor today as:
(please tick as many boxes as apply to you)

- (a) Physical (a physical illness, disease, or disability)
- (b) Emotional or psychological (e.g., stress, anxiety, depression)
- (c) Social (to do with family/partner, housing, job, money)
- (d) Administrative (like needing a 'sick note' or other form)
- (e) Other (like routine check-up, repeat prescription, etc)

3. Regarding the problems(s) you are seeing the doctor about today, please circle the number that best indicates how you feel about each statement:

		Doctor alone	Mostly the doctor	Doctor and you equally	Mostly you	You alone
A	Who should decide what the likely causes of your symptoms are (make a diagnosis)?	1	2	3	4	5
B	Who should decide what the treatment <u>options</u> are (what the choices are regarding the treatment)?	1	2	3	4	5
C	Who should decide what the <u>benefits</u> (and possible risks) are of each treatment option (if more than one treatment is possible, who should weigh up the pros and cons of each choice of treatment)?	1	2	3	4	5

D	Who should decide how likely each of these risks and benefits are to happen? (Weigh up how likely to happen each benefit or risk is for each choice of treatment)?	1	2	3	4	5
E	Who should decide how <u>acceptable</u> those benefits (and risks)are for you (Having weighed up the pros and cons of different treatments, decide on what's acceptable to you)?	1	2	3	4	5
F	Who should decide which <u>treatment to choose</u> (decide which treatment option should be selected)?	1	2	3	4	5

4. *What is your age?* _____

5. *What is your gender?* Male Female

6. *What is your marital status?*

Single Married/living with a partner
 Separated (but still legally married) Divorced Widowed

7. *What language(s) do you normally speak at home?*

English Other (please specify _____)

8. *Over the last 12 months, would you say your health has on the whole been:*

Very good Good Fair Bad Very bad

9. *Do you have any long-term illness, health problem or disability which limits your daily activities or the work you can do?*

Yes No

10. *Has a doctor ever told you that you have had one of the following?* (please tick as many boxes as apply to you)

High blood pressure Diabetes Angina/heart attack
 Heart Failure Stroke/mini-stroke Arthritis Back
 problems Chronic Bronchitis Eczema/psoriasis
 Asthma Thyroid problems Migraine Anxiety/depression
 Kidney disease Liver disease Cancer
 Irritable bowel syndrome Other (please state _____)

11. *How many times in the last 12 months have you visited a GP?* _____

Please complete the following questions after you have seen the doctor*(please answer all the questions on both sides of the pages)*

1. Please answer all the questions below by ticking the appropriate boxes. (If you feel a question is not relevant or does not apply to you today, tick the “Does Not Apply to me today” box)

As a result of your visit to the doctor today, do you feel you are...?

	Much Better	Better	Same or Less	Does not apply to me today
Able to cope with life	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Able to understand your illness	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Able to cope with your illness	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Able to keep yourself healthy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Much More	More	Same or Less	Does not apply to me today
Confident about your health	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Able to help yourself	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Name of Doctor seen today _____

2. How long did you spend with the doctor? _____ (minutes)

How do you rate this?

Very poor Poor Fair Good Very good Excellent

3. Would you recommend this doctor to your family and friends?

Definitely not Probably not Not sure Probably yes Definitely yes

4. All things considered, how satisfied are you with today's consultation?

Completely satisfied Very satisfied Fairly satisfied
Neutral
Fairly dissatisfied Very dissatisfied Completely dissatisfied

6. Did you discuss a problem with the doctor today? (e.g. Cough, backache, depression). If you came with more than one problem please select the main problem discussed with the doctor today.

Please write down the main symptom of your problem:

SYMPTOM 1 _____

Please put a cross in the box to show how severe your symptom has been in the last week.

	1	2	3	4	5	6	7	
As good as it could be	<input type="checkbox"/>	As bad as it could be						

How long have you had this symptom (either all the time or on and off)?

Less than 1 week <input type="checkbox"/>	1-4 weeks <input type="checkbox"/>	4 -12 weeks <input type="checkbox"/>
3 months – 1 year <input type="checkbox"/>	1-5 years <input type="checkbox"/>	More than 5 years <input type="checkbox"/>

7. If you have another symptom from your main problem, please write it down

SYMPTOM 2 _____

Please put a cross in the box to show how severe your second symptom has been in the last week.

	1	2	3	4	5	6	7	
As good as it could be	<input type="checkbox"/>	As bad as it could be						

8. If there is an activity that has been affected by your main problem, please write it down

ACTIVITY: I cannot _____

Put a cross in the box to show how much your symptoms have limited this activity in the last week.

1	2	3	4	5	6	7
---	---	---	---	---	---	---

As good as it could be	<input type="checkbox"/>	As bad as it could be						
------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	-----------------------

9. How would you rate your general feeling of well-being in the last week?

WELL-BEING:

As good as it could be 1 2 3 4 5 6 7 As bad as it could be

10. Regarding the problems(s) you saw the doctor about today, please circle the number that best indicates how you feel about each statement:

		Doctor alone	Mostly the doctor	Doctor and you equally	Mostly you	You alone
A	Who decided what the likely causes of your symptoms were (made a diagnosis)?	1	2	3	4	5
B	Who decided what the treatment <u>options</u> were (what the choices were regarding the treatment)?	1	2	3	4	5
C	Who decided what the <u>benefits</u> (and possible risks) were of each treatment option (if more than one treatment was possible, who weighed up the pros and cons of each choice of treatment)?	1	2	3	4	5
D	Who decided how likely each of these risks and benefits are to happen? (Weighed up how likely to happen each benefits or risk was for each choice of treatment)?	1	2	3	4	5
E	Who decided how <u>acceptable</u> those benefits (and risks) are for you (Having weighed up the pros and cons of different treatments, decided on what was acceptable to you)?	1	2	3	4	5
F	Who decided which <u>treatment to choose</u> (decided which treatment option should be selected)?	1	2	3	4	5

11. Overall, how happy are you with the amount of involvement (participation) you had in today's consultation? (How much you were involved in making decisions about diagnosis and treatment options)

Completely happy Very happy Fairly happy Neutral
 Fairly unhappy Very unhappy Completely unhappy

12. Is the doctor seen today your usual or regular doctor?

Yes No I do not have a regular doctor

13. How well do you know the doctor you saw today?

(Please circle the number that best fits, where '1' means you do not know the doctor at all and '5' means that you know the doctor very well).

(Don't know doctor at all) **1** **2** **3** **4** **5** (Know doctor very well)

14. If it had been possible, would you rather have seen a different doctor today?

Yes No

.Over the last 2 weeks, how often have you been bothered by any of the following problems?. (Please answer all the questions by circling the answer which you feel most closely applies to you)

	Not at all	Several days	More than half the days	Nearly every day
1. Little interest or pleasure in doing things	0	1	2	3
2. Feeling down, depressed, or hopeless	0	1	2	3
3. Trouble falling or staying asleep, or sleeping too much	0	1	2	3
4. Feeling tired or having little energy	0	1	2	3
5. Poor appetite or overeating	0	1	2	3
6. Feeling bad about yourself – or that you are a failure or have let yourself or your family down	0	1	2	3
7. Trouble concentrating on things, such as reading the newspaper or watching television	0	1	2	3
8. Moving or speaking so slowly that other people could have noticed. Or the opposite – being so fidgety or restless that you have been moving around a lot more than usual	0	1	2	3

9. Thoughts that you would be better off dead, or hurting yourself in some way	0	1	2	3
10. If you checked off any problems, how difficult have these problems made it for you to do your work, take care of things at home, or get along with other people?	0	1	2	3

16. A number of statements which people have used to describe themselves are given below. Read each statement and then circle the most appropriate number to the right of the statement to indicate how you feel right now, at this moment.

		Not at all	Somewhat	Moderately	Very much
1.	I feel calm	1	2	3	4
2.	I am tense	1	2	3	4
3.	I feel upset	1	2	3	4
4.	I am relaxed	1	2	3	4
5.	I feel content	1	2	3	4
6.	I am worried	1	2	3	4

PLEASE COMPLETE THIS FINAL SECTION SO THAT WE CAN CONTACT YOU AGAIN IN 1 MONTH TO SEE IF THINGS HAVE IMPROVED FOR YOU

Full Name		Date of Birth	
Address and Postcode			
Telephone number			
Today's date			

Did anyone help you fill in this questionnaire?

No Yes

If you would like to receive a summary of the findings tick the box below

I would like a copy of the overall findings of the study

*Please now place this questionnaire in the sealed box at the reception desk
Thank you very much for your help*

Patient Questionnaire (v.1) 24/04/2006

Notes on Questionnaire content

Pre-consultation items

Q1, 2: See Mercer and Watt 2007, originally used by Howie et al 1999

Q3: Modification of the Problem Solving and Decision Making Scale (Deber, Kraetschmer, Irvine 1996). In the original version the authors devised three clinical scenarios and asked patients to rate how much they would like to be involved in these different situations, as they conducted this original research by way of population survey. With the authors permission we made some modifications to the measure to make it relevant to the consultation about to happen, and we piloted this on 10 patients in a high deprivation practice and 10 in a low deprivation practice, and on the basis of this made some minor word changes to make it more easily understood.

Q4-11: Taken from previous work, see mercer and Watt 2007

Post-consultation items

Q1: Patient enablement instrument, Howie et al 1999

Q2-4: taken from Mercer and Watt 2007

Q 5: the CARE Measure, Mercer et al 2004

Q6-9: The MYMOP (Paterson 1996)

Q 10: Problems Solving and Decision Making Scale as above but asking who actually *did* decide rather than who *should* decide.

Q11: Non-validated item, devised by Stewart Mercer

Q 12-14: As used by Howie et al 1999

Q 15: PHQ-9, a widely used measure of depressive symptoms (Kroenke et al 2001)

Q 16: State Anxiety Inventory (Marteau and Bekker 1992)

The final version of the questionnaire was piloted on a further 15 patients in a high deprivation setting before being used in the main study.

Appendix E – The CARE Measure (Mercer et al. 2004)

5. Please rate the following statements about today's consultation. Please tick one box for each statement and answer every statement.

<i>How was the doctor at ...</i>	Poor	Fair	Very Good	Excellent	Does Not Apply
1. Making you feel at ease..... <i>(being friendly and warm towards you, treating you with respect; not cold or abrupt)</i>	<input type="checkbox"/>				
2. Letting you tell your “ story”..... <i>(giving you time to fully describe your illness in your own words; not interrupting or diverting you)</i>	<input type="checkbox"/>				
3. Really listening <i>(paying close attention to what you were sayings; not looking at the notes or computer as you were talking)</i>	<input type="checkbox"/>				
4. Being interested in you as a whole person ... <i>(asking/knowing relevant details about your life, your situation; not treating you as “just a number”)</i>	<input type="checkbox"/>				
5. Fully understanding your Concerns..... <i>(communicating that he/she had accurately understood your concerns; not overlooking or dismissing anything)</i>	<input type="checkbox"/>				
6. Showing care and compassion.... <i>(seeming genuinely concerned, connecting with you on a human level; not being indifferent or “detached”)</i>	<input type="checkbox"/>				
7. Being Positive..... <i>(having a positive approach and a positive attitude; being honest but not negative about your problems)</i>	<input type="checkbox"/>				
8. Explaining things clearly..... <i>(fully answering your questions, explaining clearly, giving you adequate information; not being vague)</i>	<input type="checkbox"/>				
9. Helping you to take control..... <i>(exploring with you what you can do to improve your health yourself; encouraging rather than “lecturing” you)</i>	<input type="checkbox"/>				
10. Making a plan of action with you ... <i>(discussing the options, involving you in decisions as much as you want to be involved; not ignoring your views)</i>	<input type="checkbox"/>				

Appendix F – A comparison of responders and non-responders

A comparison of the characteristics responders and non-responders

Table 58 showed that the mean age score of the responding and non-responding group was not significantly different between the low and high deprivation groups. There were also no significant differences found for gender between the responding and non-responding group regardless of deprivation status.

Table 58: Patient demographics

Patient Questionnaire Category	Deprivation Status	Statistic	Responders	Non-responders	<i>p-value</i>
Age	Low Deprivation	Mean (SD) N	49.6 (18.6) 232	52.7 (20.9) 67	0.32
	High Deprivation	Mean (SD) N	53.4 (16.7) 225	46.7 (17.0) 131	0.00
Gender	Low Deprivation	% Female N	67.4 157	62.7 42	0.47
	High Deprivation	% Female N	62.2 140	63.4 83	0.83

A comparison of the characteristics responders and non-responders by deprivation – pre consultation

The health variables that were explored are shown in Table 59, and compare the responding and non-responding groups by their deprivation status.

Table 59: Health Variables

Patient Questionnaire Category	Deprivation Status	Statistic	Responders	Non-responders	p-value
Rating of health during past year	Low Deprivation	Mean (SD) N	2.3 (1.0) 227	2.3 (0.9) 67	0.79
	High Deprivation	Mean (SD) N	2.7 (1.0) 221	2.9 (1.1) 129	0.15
No. of times visit GP in past year	Low Deprivation	Mean (SD) N	5.5 (5.0) 219	5.5 (4.5) 64	0.75
	High Deprivation	Mean (SD) N	6.6 (6.3) 210	7.1 (6.4) 117	0.47
Mental Health (PHQ-9)	Low Deprivation	Mean (SD) N	5.4 (5.5) 228	5.7 (5.4) 63	0.67
	High Deprivation	Mean (SD) N	7.1 (6.4) 217	7.4 (6.8) 125	0.80
Mental Health – Anxiety	Low Deprivation	Mean (SD) N	10.3 (3.9) 284	9.8 (3.8) 62	0.25
	High Deprivation	Mean (SD) N	11.4 (3.4) 337	11.9 (3.8) 121	0.50
Multiple Morbidity	Low Deprivation	Mean (SD) N	1.8 (1.7) 234	2.1 (1.7) 66	0.19
	High Deprivation	Mean (SD) N	2.0 (1.7) 197	2.1 (1.7) 224	0.64

The patient's self-reported general health in the past year (12 months), the frequency of consultations (no. of times visited a GP in past year), the amount of reported depressive symptoms (PHQ-9 scores) and anxiety levels as well as reported multiple morbidity was not significantly different between the high and low deprivation groups respectively for both the responding and non-responding groups (Table 59).

However, there were more visits to the GP and more reported instances of mental health issues, and anxiety within the high deprivation compared with the low deprivation patients in both the responders and non-responding groups. There was also more instances of multiple morbidity reported within the high deprivation non-responding groups compared with the both the high and low responding groups (Table 59).

12.8 A comparison of the characteristics responders and non-responders by deprivation – pre and post consultation

Table 60 compares the high and low deprivation groups for reasons for consulting categories between the responding and non-responding groups.

Table 60: Consultation characteristics pre consultation

Patient Questionnaire Category	Deprivation Status	Statistic	Responders	Non-responders	p-value
Reason for consulting:	Low Deprivation				
Physical Problem		N (%)	178 (76.4)	60 (89.6)	<0.02
Emotional Problem		N (%)	38 (16.3)	13 (19.4)	0.55
Social Problem		N (%)	8 (3.4)	3 (4.5)	0.69
Administrative Problem		N (%)	9 (3.9)	5 (7.5)	0.22
Other Problem		N (%)	60 (25.9)	16 (23.9)	0.74
	High Deprivation				
Physical Problem		N (%)	172 (76.8)	170 (81.7)	0.28
Emotional Problem		N (%)	35 (15.6)	27 (20.6)	0.23
Social Problem		N (%)	6 (2.7)	5 (3.8)	0.55
Administrative Problem		N (%)	12 (5.4)	8 (6.1)	0.77
Other Problem		N (%)	66 (29.5)	28 (21.4)	0.10
Number of Problems to discuss	Low Deprivation	Mean (SD) N	1.5 (0.7) 233	1.6 (0.8) 67	0.26
	High Deprivation	Mean (SD) N	1.7 (0.8) 355	1.8 (0.8) 131	0.66
How well they know doctor	Low Deprivation	Mean (SD) N	3.5 (1.3) 229	3.5 (1.2) 64	0.96
	High Deprivation	Mean (SD) N	4.1 (1.1) 126	4.0 (1.0) 214	0.43
Expectations of Involvement	Low Deprivation	Mean (SD) N	13.8 (3.7) 151	14.4 (4.1) 64	0.15
	High Deprivation	Mean (SD) N	13.3 (3.9) 187	12.3 (4.2) 123	0.08

There were no significant differences found for the patient's reasons for consulting or the number of problems that they came to the consultation to discuss, or relational continuity of care (how well the patient reported knowing their doctor) between the high and low deprivation groups between the responding and non-responding groups (Table 60). However, there was a significant higher score (higher mean score) for the patients expectations for involvement within the decision making process of the consultation within the low deprivation comparing with the high deprivation groups for both responding and non-responding patients.

Table 61: Consultation characteristics post consultation

Patient Questionnaire Category	Deprivation Status	Statistic	Responders	Non-responders	p-value
Mean CARE score	Low Deprivation	Mean (SD) N	4.5 (0.6) 301	4.5 (0.6) 66	0.63
	High Deprivation	Mean (SD) N	4.3 (0.7) 223	4.4 (0.7) 131	0.73
Consultation Length (minutes)	Low Deprivation	Mean (SD) N	7.4 (12.9) 232	8.7 (4.2) 66	0.98
	High Deprivation	Mean (SD) N	8.2 (8.3) 222	8.7 (4.0) 130	0.75
Amount of time patient explained problem before being interrupted (seconds)	Low Deprivation	Mean (SD) N	22.1 (24.0) 174	21.5 (22.1) 62	0.95
	High Deprivation	Mean (SD) N	21.5 (17.6) 177	27.4 (22.4) 88	<0.04
Rating of participation in consultation	Low Deprivation	Mean (SD) N	1.7 (0.7) 221	1.7 (0.7) 63	0.85
	High Deprivation	Mean (SD) N	1.9 (0.7) 215	2.0 (0.8) 122	0.43
Satisfaction with participation (decision making)	Low Deprivation	Mean (SD) N	14.4 (3.8) 214	14.5 (3.5) 64	0.95
	High Deprivation	Mean (SD) N	12.6 (3.8) 220	12.1 (3.9) 128	0.42
Patient Enablement (Howie)	Low Deprivation	Mean (SD) N	4.0 (3.3) 234	3.7 (2.8) 67	0.60
	High Deprivation	Mean (SD) N	4.1 (3.3) 225	3.6 (3.3) 130	0.17
Patient satisfaction	Low Deprivation	Mean (SD) N	1.7 (1.0) 216	1.6 (0.7) 82	0.87
	High Deprivation	Mean (SD) N	1.7 (0.8) 237	1.9 (1.1) 112	0.20
Would recommend GP to family	Low Deprivation	Mean (SD) N	4.8 (0.6) 216	4.8 (0.6) 82	0.68
	High Deprivation	Mean (SD) N	4.7 (0.6) 238	4.7 (0.7) 112	0.52

There were no significant differences found for the mean CARE score, the consultation length (minutes), rating of participation within the consultation, satisfaction with participation (decision making), patient enablement, patient satisfaction, or whether the patient would recommend their GP to a family member between the high and low deprivation groups

between the responding and non-responding groups (Table 61). However, patient's enablement and satisfaction was higher (higher mean count) in the responding compared with the non-responding groups in the high and low deprivation groups.

The amount of talk time the patient was allowed at the start of the consultations was significantly higher in the high deprivation compared with the low deprivation group, with the non-responding patients recording more time to speak before being interrupted at the start of the consultation compared with responding patients.

Conclusions

The responding and non-responding groups are similar in terms of the patient characteristics, however as expected there are more instances of multiple morbidity and mental health issues recorded in the high deprivation compared with the low deprivation groups regardless of the patients response status. Patients in low deprivation group reported feeling more satisfied, enabled and involved in the decision making process within the consultation than the high deprivation group. The high deprivation group however rated themselves as being more satisfied with their consultation than the low deprivation group and where given more time to explain their condition at the start of the consultation before being interrupted by their GP.

Appendix G – Analysis of key confounders; Davis FDS

The results of the coding analysis were re-examined to account for key confounders. This work was undertaken as a quality control measure to test whether the significant results within the Davis chapter could be the result of potential confounding factors.

Due to the size of the data the analysis of the confounders was examined at four levels;

Model 1 controlled for age and gender.

Model 2 controlled for age, gender multiple morbidity (MM) and PHQ-9 and anxiety

Model 2b controlled for age, gender, rating of health in past year, PHQ-9 and anxiety.

Model 2c controlled for age, gender, rating of health in past year, duration of symptoms, PHQ-9 and anxiety.

These lists were selected on the basis that these variables had produced significant results in the earlier analysis. The regression analysis was measured using SPSS v18.0. It is a rule of thumb when using regression analysis that the number of confounders per number of cases is taken into account. A minimum of 10 events per independent variable has been recommended (Peduzzi et al. 1996). The data within this analysis fulfils this recommendation.

It is important to note that the output presented in the tables below come from individual regression models.

Davis Code Totals

Table 62: Beta, p-values, odd's ratios and CI's of odd's ratios of models 1, 2, 2b and 2c potential confounders for the high and low deprivation groups.

Variable	B	p-value	Odd's Ratio	95% CI for Odd's Ratio (Lower – Upper)
Total Number of Codes *	0.09	<0.05	1.01	0.99-1.01
Total Number of Codes **	0.01	0.31	1.01	0.99-1.02
Total Number of Codes ***	0.06	0.34	1.01	0.99-1.02
Total Number of Codes ****	0.01	0.35	1.01	0.99-1.02

* controlled for age and gender

** controlled for age, gender MM, PHQ-9 and anxiety

*** controlled for age, gender, rating of health in past year, PHQ- 9 and anxiety

**** controlled for age, gender, rating of health in past year, duration of symptoms, PHQ- 9 and anxiety

The insignificant relationship found for the total number codes between the high and low deprivation groups was analysed against the potential confounders (Table 62).

Model 1: The results show that for total number of codes there was a significant difference found between the low and high deprivation groups when controlling for age and gender. This finding is supported by a slight overall percentage change (53.5-56.0) and a positive Beta value. Overall total number of codes remained statistically significant when age and gender were taken into account.

Model 2: The results show that for total number of codes there was no significant difference found between the low and high deprivation groups when controlling for age, gender, multiple morbidity (MM), PHQ-9 and anxiety. This finding is supported by a very small percentage change (53.6-59.2) and a positive Beta value. Overall total number of codes was no longer statistically significant when the patient's mental health status was taken into account.

Model 2b: The results show that for total number of codes there was no significant difference found between the low and high deprivation groups when controlling for controlled for age,

gender, rating of health in past year, PHQ-9 and anxiety. This finding is supported by a very small percentage change (53.6-60.0) and a positive Beta value.

Model 2c: The results show that for total number of codes there was no significant difference found between the low and high deprivation groups when controlling for controlled for age, gender, rating of health in past year, duration of symptoms, PHQ-9 and anxiety. This finding is supported by a very small percentage change (54.4-62.0) and a positive Beta value.

Individual Codes

The significant relationships found for Structured Interaction, History Taking, Treatment Effects, Evaluation Feedback, Physical Examination, Compliance, Health Promotion, Smoking, Substance Use, and Procedure. As for the additional codes Weight and Computer Entry between the low and high deprivation group were analysed against potential confounder's age and gender (Table 62).

Table 63: Beta, p-values, odd's ratios and CI's of odd's ratios of model 1 potential confounders for the high and low deprivation groups.

Variable	B	p-value	Odd's Ratio	95% CI for Odd's Ratio (Lower – Upper)
Chatting (CH)*	0.04	0.93	1.00	0.92-1.09
Structured Interaction (SI)*	0.18	0.18	1.19	0.92-1.55
Counselling (CO)*	-0.13	0.14	0.88	0.73-1.04
History Taking (HT)*	0.27	<0.05	1.03	1.00-1.06
Family Information (FI)*	0.14	0.66	1.01	0.95-1.08
Treatment Effects (TE)*	-0.06	<0.05	0.25	0.85-1.04
Health Knowledge (HK)*	0.13	<0.04	1.14	1.00-1.30
Evaluation Feedback (EF)*	-0.13	0.10	0.88	0.79-0.97
Physical Examination (PE)*	0.11	<0.00	1.11	1.03-1.20
Patient Question (PQ)*	-0.16	0.77	0.98	0.88-1.09
Compliance (CM)*	-0.19	<0.03	0.83	0.73-0.94
Preventative Services (PS)*	0.13	0.73	1.14	0.55-2.34
Health Education (HE)*	-0.19	0.55	0.98	0.92-1.04
Health Promotion (HP)*	0.26	<0.02	1.30	1.10-1.53
Planning Treatment (PT)*	-0.17	0.46	0.98	0.94-1.03
Exercise (EX)*	0.06	0.51	1.07	0.89-1.28
Smoking (SM)*	0.41	<0.00	1.50	1.22-1.85
Nutrition (NU)*	0.14	0.08	1.15	0.98-1.35
Substance Use (SU)*	0.22	<0.03	1.24	1.02-1.50
Procedure (PR)*	-0.22	<0.02	0.81	0.67-0.97
Additional Codes:				
Blood Pressure (BP)*	0.08	0.22	1.08	0.96-1.22
Cholesterol (Chlstrl)*	0.05	0.69	1.05	0.84-1.31
Weight (Wght)*	0.03	0.70	1.03	0.89-1.19
Fit Note/Sick Line (DOC Line)*	-0.10	0.20	0.91	0.78-1.05
Computer Entry (COMP Ent)*	0.24	<0.00	1.28	1.13-1.45

*controlled for age and gender

Model 1: The results show that from the codes History Taking (HT), Physical Examination (PE) Compliance (CM), Health Promotion (HP), Smoking (SM), Substance Use (SU) and Procedure (PR) remained statistically significant when age and gender, as well as additional variables Computer Entry (Comp ENT) were taken into account. These results were supported by slight percentage changes (53.5-56.0; 58.8; 56.8; 58.0; 57.4; 57.2; 57.2; 54.9 respectively) and positive Beta values with the exceptions of Compliance (CM) and Procedure (PR) which produced negative Beta values suggesting there was a likelihood these codes were from patients in the high deprivation group.

These results show that the patient's age and gender affected the previously significant results for Structured Interaction (SI), Treatment Effects (TE), and Evaluation Feedback (EF). As well as additional code Weight (Wght).

The significant relationships found for Structured Interaction (SI), History Taking (HT), Treatment Effects (TE), Evaluation Feedback (EF), Physical Examination (PE), Compliance (CM), Health Promotion (HP), Smoking (SM), Substance Use (SU), and Procedure (PR). As for the additional codes Weight (Wght) and Computer Entry (Comp ENT) between the low and high deprivation group were analysed against potential confounders' age, gender, multiple morbidity (MM), PHQ-9, and anxiety.

Table 64: Beta, p-values, odd's ratios and CI's of odd's ratios of model 2 potential confounders for the high and low deprivation groups.

Variable	B	p-value	Odd's Ratio	95% CI for Odd's Ratio (Lower – Upper)
Chatting (CH)**	-0.03	0.62	0.98	0.89-1.08
Structured Interaction (SI)**	0.32	0.12	1.38	0.92-2.08
Counselling (CO)**	-0.16	0.12	0.86	0.71-1.04
History Taking (HT)**	0.10	0.51	1.01	0.98-1.04
Family Information (FI)**	-0.01	0.88	0.99	0.93-1.07
Treatment Effects (TE)**	-0.07	0.19	0.93	0.83-1.04
Health Knowledge (HK)**	0.13	0.06	1.14	0.99-1.31
Evaluation Feedback (EF)**	-0.11	<0.05	0.89	0.80-1.00
Physical Examination (PE)**	0.213	<0.001	1.14	1.05-1.23
Patient Question (PQ)**	0.00	1.00	1.00	0.90-1.12
Compliance (CM)**	-0.17	<0.01	0.84	0.74-0.96
Preventative Services (PS)**	0.38	0.37	1.46	0.64-3.36
Health Education (HE)**	-0.01	0.66	1.00	0.92-1.05
Health Promotion (HP)**	0.23	<0.01	1.26	1.06-1.50
Planning Treatment (PT)**	-0.02	0.34	0.98	0.93-1.03
Exercise (EX)**	0.09	0.38	1.09	0.90-1.33
Smoking (SM)**	0.41	<0.001	1.51	1.20-1.89
Nutrition (NU)**	0.14	0.09	1.15	0.98-1.36
Substance Use (SU)**	0.14	0.14	1.15	0.96-1.39
Procedure (PR)**	-0.19	<0.05	0.83	0.69-1.00
Additional Codes:				
Blood Pressure (BP)**	0.12	0.07	1.13	0.99-1.29
Cholesterol (Chlstrl)**	0.05	0.72	1.05	0.82-1.33
Weight (Wght)**	0.004	0.96	1.00	0.87-1.16
Fit Note/Sick Line (DOC Line)**	-0.17	0.06	0.84	0.70-1.01
Computer Entry (COMP Ent)**	0.24	<0.001	1.27	1.11-1.46

**controlled for age, gender, MM, PHQ-9 and anxiety

Model 2: The results in Table 64 show that the codes: Evaluation Feedback (EF), Physical Examination (PE), Compliance (CM), Health Promotion (HP), Smoking (SM) and Procedure (PR) all remained statistically significant when age, gender, multiple morbidity (MM), PHQ-9 and anxiety, as were additional variable Computer Entry (COMP Ent) were taken into account.

These results were supported by slight percentage changes (53.5-58.4; 61.4; 62.3; 59.9; 62.0; 59.9; 65.5 respectively) and positive Beta values, with the exceptions of Evaluation Feedback (EF), Compliance (CM) and Procedure (PR), which produced negative Beta value. This suggests there was a likelihood these codes were from patients in the high deprivation group.

These results show that codes Structured Interaction (SI), History Taking (HT) Treatment Effect (TE), Substance Use (SU) and additional code Weight (Wght) remained statistically significant when the patient's multiple morbidity and mental health status were taken into account.

The significant relationships found for Structured Interaction (SI), History Taking (HT), Treatment Effects (TE), Evaluation Feedback (EF), Physical Examination (PE), Compliance (CM), Health Promotion (HP), Smoking (SM), Substance Use (SU), and Procedure (PR). As for the additional codes Weight (Wght) and Computer Entry (Comp ENT) between the low and high deprivation groups were analysed against potential confounders' age, gender, health in last year, PHQ-9 and anxiety.

Table 65: Beta, p-values, odd's ratios and CI's of odd's ratios of model 2b potential confounders for the high and low deprivation groups.

Variable	B	p-value	Odd's Ratio	95% CI for Odd's Ratio (Lower – Upper)
Chatting (CH)***	-0.004	0.93	1.00	0.90-1.10
Structuring Interaction (SI)***	0.34	0.12	1.40	0.92-2.14
Counselling (CO)***	-0.18	0.07	1.08	1.02-1.16
History Taking (HT)***	0.01	0.50	1.01	0.98-1.04
Family Information (FI)***	-0.002	0.95	1.00	0.93-1.07
Treatment Effects (TE)***	-0.07	0.21	0.93	0.83-1.04
Health Knowledge (HK)***	0.12	0.09	1.13	0.98-1.30
Evaluation Feedback (EF)***	-0.13	<0.03	0.88	0.79-0.99
Physical Examination (PE)***	0.12	<0.004	1.12	1.04-1.22
Patient Question (PQ)***	-0.009	0.88	0.99	0.87-1.11
Compliance (CM)***	-0.17	<0.01	0.84	0.74-0.96
Preventative Services (PS)***	0.42	0.36	1.52	0.62-3.69
Health Education (HE)***	-0.02	0.62	0.98	0.92-1.05
Health Promotion (HP)***	0.24	<0.01	1.27	1.07-1.51
Planning Treatment (PT)***	-0.03	0.27	0.97	0.93-1.02
Exercise (EX)***	0.09	0.37	1.09	0.90-1.33
Smoking (SM)***	0.44	<0.00	1.55	1.22-1.97
Nutrition (NU)** *	0.16	0.06	1.17	1.00-1.38
Substance Use (SU)***	0.16	0.11	1.17	0.97-1.41
Procedure (PR)***	-0.19	<0.05	0.83	0.69-1.00
Additional Codes:				
Blood Pressure (BP)***	0.12	0.09	1.12	0.98-1.29
Cholesterol (Chlstrl)***	0.06	0.60	1.07	0.84-1.36
Weight (Wght)***	0.003	0.97	1.00	0.86-1.17
Fit Note/Sick Line (DOC Line)***	-0.18	<0.05	0.84	0.70-1.00
Computer Entry (COMP Ent)***	0.23	<0.001	1.25	1.10-1.43

***controlled for age, gender, rating of health in past year, PHQ-9 and anxiety

Model 2b: The results in Table 65 show that codes: Evaluation Feedback (EF), Physical Examination (PE), Compliance (CM), Health Promotion (HP), Smoking (SM) and Procedure (PR) all remained statistically significant when age, gender, rating of health in the past year, PHQ-9 and anxiety. The additional codes: Doctor's Line (Doc Line) and Computer Entry (COMP Ent) also remained statistically significant when tested with the list of confounders.

These results were supported by slight percentage changes (53.6-63.3, 64.2, 62.9, 64.4, 62.0, 61.5, 62.4, and 64.8 respectively) and positive Beta values, with the exceptions of Evaluation Feedback (EF), Compliance (CM) and Procedure (PR) and Doctor's Line (Doc Line), which produced negative Beta value. This suggests there was a likelihood these codes were from patients in the high deprivation group.

These results show that codes Structured Interaction (SI), History Taking (HT) Treatment Effect (TE), and additional code Weight (Wght) were no longer statistically significant when the patient's rating of own health in the past year and mental health status were taken into account. Also, a previously insignificant code, Doctor's Line (Doc Line), recorded a significant result.

The significant relationships found for Structured Interaction (SI), History Taking (HT), Treatment Effects (TE), Evaluation Feedback (EF), Physical Examination (PE), Compliance (CM), Health Promotion (HP), Smoking (SM), Substance Use (SU), and Procedure (PR) and Computer Entry (Comp ENT) between the low and high deprivation group remained unchanged by the confounding variables.

Table 66: Beta, p-values, odd's ratios and CI's of odd's ratios of model 2c potential confounders for the high and low deprivation groups.

Variable	B	p-value	Odd's Ratio	95% CI for Exp (B) (Lower – Upper)
Chatting (CH)****	-0.004	0.94	1.00	0.90-1.11
Structuring Interaction (SI)****	0.28	0.22	1.33	0.85-2.08
Counselling (CO)****	-0.25	<0.03	0.78	0.61-0.98
History Taking (HT)****	0.01	0.45	1.01	0.98-1.05
Family Information (FI)****	-0.004	0.91	1.00	0.92-1.07
Treatment Effects (TE)****	-0.06	0.34	0.94	0.84-1.06
Health Knowledge (HK)****	0.14	0.90	1.15	0.98-1.34
Evaluation Feedback (EF)****	-1.22	<0.05	0.89	0.78-1.00
Physical Examination (PE)****	0.15	<0.001	1.16	1.07-1.27
Patient Question (PQ)****	-0.04	0.52	0.96	0.85-1.09
Compliance (CM)****	-0.16	<0.03	0.85	0.74-0.98
Preventative Services (PS)****	0.25	0.57	1.29	0.54-3.03
Health Education (HE)****	-0.04	0.33	0.97	0.90-1.04
Health Promotion (HP)****	0.20	<0.03	1.22	1.02-1.46
Planning Treatment (PT)****	-0.01	0.58	0.99	0.94-1.04
Exercise (EX)****	0.03	0.77	1.03	0.83-1.28
Smoking (SM)****	0.56	<0.00	1.76	1.30-2.38
Nutrition (NU)****	0.19	<0.05	1.21	1.00-1.45
Substance Use (SU)****	0.12	0.21	1.31	0.93-1.37
Procedure (PR)****	-0.11	0.27	0.89	0.73-1.09
Additional Codes:				
Blood Pressure (BP)****	0.13	0.07	1.14	0.99-1.32
Cholesterol (Chlstrl)****	0.008	0.95	1.01	0.79-1.29
Weight (Wght)****	-0.05	0.55	0.95	0.81-1.12
Fit Note/Sick Line (DOC Line)****	-0.18	0.08	0.84	0.69-1.02
Computer Entry (COMP Ent)****	0.20	<0.01	1.22	1.06-1.41

****controlled for age, gender, rating of health in past year, duration of symptoms, PHQ-9 and anxiety

Model 2c: The results in Table 66 show that for codes Evaluation Feedback (EF), Physical Examination (PE), Compliance (CM), Health Promotion (HP), and Smoking (SM) remained statistically significant when the following factors were taken into account: age, gender, rating of health in past year, duration of symptoms, PHQ-9 and anxiety, as well additional variable Computer Entry (COMP Ent) were taken into account.

These results were supported by slight percentage changes (53.6-59.7, 58.4, 61.4, 62.3, 59.9, 62.0, 58.8, and 65.5 respectively) and positive Beta values with the exceptions of Evaluation Feedback (EF) and Compliance (CM) which produced negative Beta values suggesting there was a likelihood these codes were from patients in the high deprivation group.

These results show that codes: Structured Interaction (SI), History Taking (HT) Treatment Effect (TE), and additional code Weight (Wght) remained statistically significant when the patient's rating of own health in the past year and mental health status were taken into account.

These results show the patient's rating of health in the past year, duration of symptoms and mental health status affected the previously significant results for Counselling (CO) and Nutrition (NU).

Summary of Findings

The results showed that the positive results found within the Davis chapter (Chapter 7) between the high and low deprivation group were affected by the confounding variables.

In terms of total number of codes, the patient's age and gender had no effect on the significance of the codes. However, in terms of individual, codes age and gender had an effect on Evaluation Feedback (EF), Weight (Wght) as well as the previously insignificant code Health Knowledge (HK).

Certain codes were affected by the patient's multiple morbidity status (MM), PHQ-9 and anxiety scores as well as their reported general health in the last 12 months, as would be

expected. These codes included Structuring Interaction (SI) and Treatment Effects (TE). The patient's reported PHQ-9 and anxiety scores also affected the codes History Taking (HT) and Substance Use (SU) as well as the previously insignificant code Doctor's Line (Doc Line).

Further codes were affected by the patient's multiple morbidity status (MM), PHQ-9 and anxiety scores as well as their reported general health in the last 12 months. 'the reported duration of the patient's concern also was an impact on codes'. These codes included Procedure (PR) and the previously insignificant codes Counselling (CO) and Nutrition (NU).

The following codes were unaffected by any of the confounding variables: Physical Examination (PE), Compliance (CM), Health Promotion (HP), Smoking (SM) and Computer Entry (Comp ENT).

Appendix H – Inter-Rater Reliability; Verona Data sets 1 and 2 in more detail

The inter-rater reliability achieved within data set 1 and 2 were revisited to measure inter-rater reliability for Cues (A to G) and Health Provider Responses at levels 1, and 2.

Table 67: Cues IRR results Data set 1 A to G

	Cohen's	Davis
A	0.82	0.70
B	0.93	0.87
C	0.84	0.73
D	0.86	0.75
E	0.90	0.82
F	0.75	0.60
G	0.80	0.67
ALL	0.95	0.91

The results in Table 67 show that a good inter-rater reliability was achieved by coders 1 and 2 within all of the cues presented within the Verona Coding system within data set 1.

Data set 2 was then measured to compare its inter-rater reliability results.

Table 68: Cues IRR results Data set 2

	Cohen's	Davis
A	1.00	1.00
B	0.92	0.86
C	0.92	0.86
D	1.00	1.00
E	1.00	1.00
F	1.00	1.00
G	N/K	N/K
ALL	0.95	0.91

N/K = No Kappa Available

The comparisons of data set 1 and 2 were then repeated to look at inter-rater reliability results within the health provider coding options at levels 1 and 2 (Figure 32).

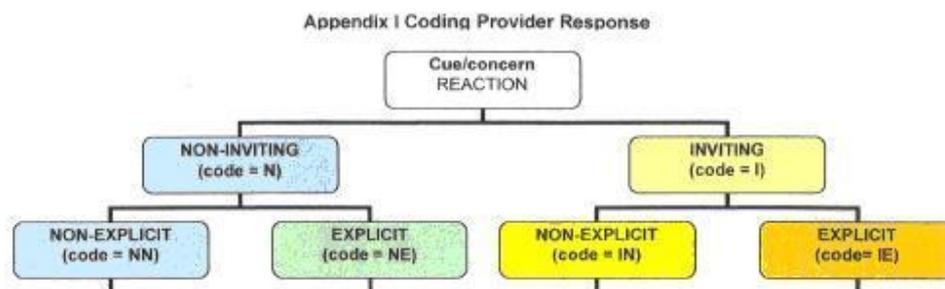


Figure 32: Verona Health Provider Responses Levels 1 and 2

Table 69 outlines the inter-rater reliability results of data sets 1 and 2 for Health Provider Responses at levels 1 and 2.

Table 69: Health Provider Responses IRR results of Levels 1 and 2 for Data Sets 1 and 2.

Health Provider Response	Symbol	Data Set 1		Data Set 2	
		Cohen's	Davis	Cohen's	Davis
Non-Inviting	N	0.90	0.83	0.91	0.82
Inviting	I	0.91	0.72	0.97	0.94
Non-Inviting Non Explicit	NN	0.95	0.90	0.86	0.75
Non-Inviting Explicit	NE	0.89	0.80	0.86	0.70
Inviting Non-Explicit	IN	0.92	0.85	0.96	0.93
Inviting Explicit	IE	0.90	0.80	1.00	1.00
ALL *		0.91 (123)	0.82 (123)	0.93 (67)	0.86 (67)

* Numbers in brackets show counts

The results in Table 70 show that good inter-rater reliability was achieved for all of the health provider response sub sections in levels 1 and 2. In total 380 Health Provider Responses were present across 20 consultations.

Table 70: IRR results for overall Health Provider Responses by deprivation and CARE measure status

Health Provider Response Overall	Data Set 1		Data Set 2	
	Cohen's	Davis	Cohen's	Davis
Low Deprivation	0.94	0.89	0.84	0.74
High Deprivation	0.94	0.89	0.91	0.85
High CARE	0.95	0.94	N/K	N/K
Mid CARE	0.91	0.84	0.86	0.76
Low CARE	0.96	0.91	N/K	N/K
ALL	0.94	0.89	0.91	0.91

N/K = No Kappa Available

The results in Table 70 show that a good inter-rater reliability was achieved across all the Health Provider Responses for the high and low deprivation groups, as well as across the 3 CARE status groups of high, mid and low CARE. This high inter-rater reliability score was achieved within both Cohen's Kappa (Cohen 1960) and the Callahan method (Callahan and Bertakis 1991) (Davis).

Appendix I – Analysis of key confounders; Verona FDS

The results of the coding analysis were re-examined to account for key confounders. This work was undertaken as a quality control measure to test whether the significant results within the Verona chapter could be the result of potential confounding factors.

Model 1 controlled for age and gender, SMID, multiple morbidity (MM), and emotional problems.

This list was selected on the basis that these variables had produced significant results in the earlier analysis. The regression analysis was measured using SPSS v18.0. It is a rule of thumb when using regression analysis that the number of confounders per number of cases is taken into account. A minimum of 10 events per independent variable has been recommended (Peduzzi et al. 1996). The data within this analysis fulfils this recommendation.

Table 71: Beta, p-values, odd's ratios and CI's of odd's ratios of potential confounders for the high and low CARE groups by deprivation.

Variable		B	p-value	Odd's Ratio	95% CI for Odd's Ratio (Lower – Upper)
Total Number of Cues *	Low Deprivation	-0.076	0.17	0.93	0.83-1.03
	High Deprivation	0.238	<0.02	1.27	1.05-1.54
Tot No of Concerns *	Low Deprivation	0.25	0.27	1.29	0.82-2.01
	High Deprivation	1.17	0.08	3.21	0.88-11.7
Tot No of Health Provider Responses *	Low Deprivation	-0.05	0.29	0.95	0.87-1.04
	High Deprivation	0.27	<0.01	1.31	1.07-1.61

*controlled for age, gender, SMID, multiple morbidity (MM), emotional problems

Table 71, results from logistic regression of all cues, concerns and health provider responses controlling for key confounders; age, gender, SMID, multiple morbidity (MM), and emotional problems as seen in Verona chapter (Chapter 11).

Table 72 shows the results from logistic regression of Cues A-G controlling for key confounders: age, gender, SMID, multiple morbidity (MM), and emotional problems as seen in Verona chapter (Chapter 11).

Table 72: Beta, p-values, odd's ratios and CI's of odd's ratios of potential confounders for the high and low deprivation groups.

Cues		B	p-value	Odd's Ratio	95% CI for Odd's Ratio (Lower – Upper)
A*	Low Deprivation	-0.59	<0.03	0.55	0.33-0.94
	High Deprivation	0.52	0.06	1.68	0.98-2.89
B*	Low Deprivation	-0.09	0.32	0.91	0.76-1.09
	High Deprivation	0.43	<0.04	1.53	1.02-2.29
C*	Low Deprivation	0.12	0.55	1.13	0.75-1.71
	High Deprivation	0.27	0.41	1.31	0.69-2.49
D*	Low Deprivation	-0.28	0.26	0.75	0.46-1.23
	High Deprivation	0.67	<0.04	1.96	1.04-3.69
E*	Low Deprivation	0.12	0.60	1.12	0.73-1.72
	High Deprivation	0.18	0.53	1.20	0.68-2.14
F*	Low Deprivation	-0.29	0.32	0.75	0.42-1.32
	High Deprivation	1.97	<0.03	7.16	1.28-40.2
G*	Low Deprivation	-0.16	0.71	0.85	0.36-2.03
	High Deprivation	-0.12	0.82	0.89	0.32-2.48

*controlled for age, gender, SMID, multiple morbidity (MM), emotional problems

Table 73, results from logistic regression of Health Provider Responses at level 1; Inviting (I) and Non-Inviting (NI) controlling for key confounders; age, gender, SMID, MM, Emotional problems as seen in Verona chapter (Chapter 11).

Table 73: Beta, p-values, odd's ratios and CI's of odd's ratios of potential confounders for the high and low CARE groups by deprivation.

Health Provider Responses *		B	p-value	Odd's Ratio	95% CI for Odd's Ratio (Lower – Upper)
Non Inviting (N)	Low Deprivation	-0.10	0.56	0.91	0.65-1.27
	High Deprivation	0.26	0.20	1.29	0.87-1.92
Inviting (I)	Low Deprivation	-0.06	0.27	0.94	0.84-1.05
	High Deprivation	0.27	<0.01	1.31	1.06-1.62

*controlled results from logistic regression of Health Provider Responses at level 2; controlling for key confounders; age, gender SMID, multiple morbidity (MM), Emotional problems as seen in Verona chapter (Chapter 11).

Table 74: Beta, p-values, odd's ratios and CI's of odd's ratios of potential confounders for the high and low CARE groups by deprivation.

Health Provider Response *		B	p-value	Odd's Ratio	95% CI for Odd's Ratio (Lower – Upper)
Non Inviting Non Explicit (NN)	Low Deprivation	-0.96	0.08	0.38	0.13-1.13
	High Deprivation	1.44	<0.05	4.21	1.02-17.4
Non Inviting Explicit (NE)	Low Deprivation	0.00	0.99	1.00	0.71-1.42
	High Deprivation	0.47	0.11	1.60	0.90-2.86
Inviting Non Explicit (IN)	Low Deprivation	-0.05	0.40	0.96	0.86-1.06
	High Deprivation	0.26	<0.02	1.30	1.05-1.61
Inviting Explicit (IE)	Low Deprivation	-2.29	1.00	0.10	0- .
	High Deprivation	0.42	0.77	1.52	0.10-23.9

*controlled for age, gender SMID, multiple morbidity (MM), emotional problems

Summary of the analysis of key confounders; Verona FDS

The results showed that the positive results found within the Verona chapter (Chapter 11) between the high and low deprivation groups remained statistically significant when the confounding variables were taken into account.

Overall, good consistency; was achieved throughout the models with the total number of Cues and Health Provider Responses as well as Cues B, D and F remained statistically significant when the confounding variables were taken into account.

Also it was found that Inviting (I), Non Inviting Non Explicit (NN) and Inviting Non Explicit (IN) Health Provider Responses were not affected by the confounding variables.

Appendix J – Correlation Matrix of Davis Codes

Table 75: Correlation Matrix for each Davis code

Variable	CH	SI	CO	HT	FI	TE	HK	EF	PE	PQ	CM	PS	HE	HP	PT	EX	SM	NU	SU	PR
Chatting (CH)	1.0	0.0	0.0	0.0	0.0	-0.1	0.0	0.0	0.0	0.1	0.1*	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1*
Structured Interaction (SI)	0.0	1.0	0.3**	-	0.0	0.0	0.1	0.1*	0.0	0.0	0.0	0.1**	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Counselling (CO)	0.0	0.03**	1.0	0.1	0.2**	0.0	-0.1	-0.1	*-0.11	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1
History Taking (HT)	0.0	-0.1	0.**	1.0	0.4**	0.1*	0.0	0.1**	0.152**	0.2	0.3	0.0	0.3**	0.3**	0.4	0.1	0.2**	0.218**	0.3**	0.0
Family Information (FI)	0.0	0.0	0.2**	0.4	1.0	0.0	0.0	0.0	-0.1	0.0	0.0	0.0	0.1	0.1*	0.0	0.1	0.1	0.1	0.1	0.1
Treatment Effects (TE)	-	0.0	0.0	0.1	0.0	1.0	0.2**	0.0	0.0	0.2	0.4**	0.0	0.2**	-0.1	0.1	0.0	0.0	0.0	-0.1	0.0
Health Knowledge (HK)	0.0	0.1	-0.1	0.2	0.0	0.2*	1.0	0.1*	0.1	0.1	0.1*	0.0	0.3**	0.0	0.2	0.0	0.1	0.2**	0.0	0.0
Evaluation Feedback (EF)	0.0	0.01*	-0.1	0.1	0.0	0.0	0.1**	1.0	0.1**	0.2	0.2**	0.0	0.1*	0.0	0.0	0.0	-0.1	0.2**	(**)- 0.118	0.0
Physical Examination (PE)	0.0	0.0	0.1*	0.2	0.0	0.0	0.1	0.5**	1.0	0.0	0.0	-0.1	0.1	0.0	0.1	0.0	0.1	0.0	0.0	0.0
Patient Question (PQ)	0.1	0.0	0.0	0.2	0.0	0.2**	0.1	0.2**	0.0	1.0	0.1*	0.0	0.4**	0.1	0.2	0.0	0.1	0.0	0.1	0.0
Compliance (CM)	0.1	0.0	-0.2	0.3	0.0	0.4**	0.1*	0.2**	0.0	0.1	1.0	0.0	0.2**	0.0	0.2	0.0	-0.1	0.1	0.1	0.1
Preventative Services (PS)	0.0	0.1**	0.0	0.0	0.0	0.0	0.0	0.2**	-0.1	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Health Education (HE)	-	0.0	0.0	0.3	0.1*	0.2**	0.3**	0.0	0.1	0.4	0.2	0.2**	1.0	0.1	0.3	0.0	0.0	0.2**	0.0	0.1
Health Promotion (HP)	0.0	0.0	0.1	0.3	0.1*	-0.1	0.0	0.1*	0.0	0.1	-0.3	0.0	0.1	1.0	0.1	0.2**	0.4**	0.3**	0.0	-0.1
Planning Treatment (PT)	0.0	0.0	0.0	0.4	0.0	0.2**	0.2**	0.4	0.1*	0.0	0.2**	0.2**	0.3**	0.1*	1.0	-0.1	0.0	0.3**	0.362**	0.1
Exercise (EX)	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2**	-	1.0	0.0	0.2	0.1	0.0
Smoking (SM)	0.0	0.0	0.0	0.2	0.1	0.0	0.1	-0.1	0.1	0.1	-0.1	-0.1	0.0	0.4**	0.0	0.0	1.0	0.0	0.207**	0.0
Nutrition (NU)	0.0	0.0	0.0	0.2	0.1	0.0	0.2**	0.1**	0.0	0.0	0.1	0.1	0.2**	0.3**	0.1	0.0	0.0	1.0	0.119**	0.0
Substance Use (SU)	0.0	0.0	0.0	0.3	0.1	-0.1	0.0	0.1**	0.0	0.1	0.0	0.0	0.0	0.4**	0.1	0.0	0.2**	0.1**	1.0	-0.1
Procedure (PR)	0.1	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	-0.1	0.1	0.0	0.0	0.0	-0.1	1.0

* Correlation is significant at the 0.05 level (2-tailed)

** Correlation is significant at the 0.01 level (2-tailed)

Appendix K – Correlations of Davis Codes

Individual Davis Codes – Correlations between codes

The correlations between the Davis codes range from -0.07 through to 0.37 and generally were not significant. A correlation matrix of the individual Davis codes can be seen in Appendix J.

Appendix L – Davis & Verona Data in more detail

Summary of the justification of the Verona and Davis coding system selection

The Verona coding system (Verona-CoDES-CC)(Del Piccolo et al. 2009) was selected as a patient assessed measure of health professional's communication and empathy skills within consultations. The Verona Coding sequence of Emotional Sequences for Cues and Concerns (Verona-CoDES-CC) (Del Piccolo et al. 2009) is a newly developed coding system that categories the patient's Cues, Concerns, and the Health Provider Responses providing a systematic approach to evaluate the communication that has occurred within the consultation.

The use of VERONA provided the opportunity to use a relatively new coding system to explore empathic communication within general practice consultations from an observer's perspective. The literature on the empathy in the consultation has largely focused on the patient's perspective and used patient rated measures similar to the CARE measure which was also used in the thesis. The use of VERONA allowed for both the patient's perception and observers perceptions of empathy within the consultation to be compared both in terms of the nature, type and frequency of its occurrence. Further to this, the consultations allowed high and low empathy scoring GP consultations to be compared across a range of routine general practice consultation topics.

The work within the thesis is the first time that the VERONA coding system has been used in its entirety on consultation data. It is also the first known use of VERONA on general practice consultation data, and the first comparison of its use in terms of a high and low deprivation patient population.

It is also the first time that the CARE measure scores that patients report have been investigated in terms of an objective measure of the consultation that captures behaviours by patients (cues) and practitioners (responses) in relation to perceived empathy.

In relation to the project objectives, the Davis Observation Code (DOC) assesses the nature, type and frequency of Self-Management Support (including Anticipatory Care) in general practice consultations (objective 1) as well as providing information on how the time within the consultation was divided between communication and practical tasks.

This information was examined alongside previously gathered health outcomes and measures of patient enablement to compare the effects of Self-Management Support (including Anticipatory Care) in groups of high and low deprivation (objective 2).

The coding work carried out using the Davis coding system was compared to determine whether patients' perceptions of GP empathy are related to Self-Management Support (including Anticipatory Care) in consultations in high and low deprivation groups (objective 3).

Finally, the patients' perception of empathy in terms of the nature, type, and frequency of emotional cues and responses were coded within the consultations. These consultations involved GPs who were rated as high or low in empathy by their patients and the consultations involved both high and low deprivation groups coded using the Verona coding system alongside the CARE measure (objective 4).

Davis Data

For the analysis of the Davis data set (Chapter 7) 499 videos were selected from a larger data set of 659 videoed consultations recorded originally by the previous study (Mercer et al. 2012). The consultations selected for further analysis involving participants who completed a one month follow up questionnaire as part the original study and a videoed consultation.

Sample Characteristics Implications

The sampling frame resulted in 75% of the original dataset being coded using the Davis Observation Code (DOC). Originally the intention was to use the data set in its entirety however this was a labour intensive process that took a considerable amount of time, from the initial stages of picking a coding system that met most of the requirement of the research's

objectives, through to learning, and coding the videoed consultations themselves. The data that were not coded included the patients who did not take part in the 2 month follow up questionnaire as part of the previous study (Mercer et al. 2012) A considerable amount of time was invested into inter and intra-rater reliability checking, this was undertaken in cycles. inter-rater reliability analysis was undertaken between March 2010 and February 2011 and intra-rater reliability was undertaken between February 2011 and June 2011.

This large amount of data that was selected for analysis allowed comparison of the high and low CARE measure scoring GPs with high and low deprivation practices. The data include 20 practices overall, with slightly more low deprivation compared to high deprivation general practices (22 and 25 respectively). Two thirds of patients were female, with an average age of 52.3 years (54.8 and 50.8 years of age for male and female patients respectively), which is typical of patients in general.

Verona Data

For analyses using the Verona chapter (Chapter 11) 112 GP consultations were selected for study, comparing consultations with high and low patient ratings of practitioner empathy (CARE scores) in practices serving very deprived and non-deprived populations.

These consultations were then coded using the Verona-CoDes-CC (Del Piccolo et al. 2009). Like the Davis Observation Code (DOC), learning the Verona coding system took a considerable amount of time, this was complicated by the fact the Verona system when originally selected for use was fairly new and there was very little literature on its use published.

A considerable amount of time was invested into inter- and intra-rater reliability checking while learning the Verona system. This process is outlined in Chapter 10.

Sample Characteristics Implications

The sampling frame resulted in 17% of the original dataset being coded using the Verona-CoDes-CC. This subsection of videos was used due to the labour intensive process that

transcription of the consultation videos required in order to use the Verona system. Also a considerable amount of time was spent learning the coding process and checking cycles of inter-rater reliability. Details of the inter-rater reliability cycles and timescale can be found in Chapter 10.

This data set allowed for a comparison of the high and low CARE measure scoring GPs with high and low deprivation practices. The data include 8 GPs from 5 practices and 112 videoed consultations. More detail can be found in Chapter 11.

Characteristics of the participating patients

The selected GP's patients were also similar in terms of their reported health status with self reported health within the past 12 months; however, those who reported slightly worse health tended to be in the high deprivation groups and, as a result, also reported attending their GP surgery more often and more instances of multiple morbidity. There were no significant differences between the high and low deprivation groups in terms of their reported anxiety and mental health (PHQ-9) (Chapter 7) which is contrary to previous literature showing a higher prevalence of mental health issues in high deprivation compared with low deprivation areas (Fiscella 1999; Beaudoin et al. 2001). These differences could be attributed to the size of the data sample, or as a result of the selected consultations representing extremes within data i.e. the top and bottom two CARE scoring GPs from the high and low deprivation groups. The results in context chapter (Chapter 4) show that there was a higher prevalence of mental health issues and anxiety in the high deprivation group which is in line with published literature (Chapter 7) (Mercer et al. 2008).

The patient groups were also compared in terms of their expectations of the consultation. This comparison showed that there were no significant differences for the patient reported reasons for consultation between the high and low deprivation groups with the exception of emotional problems, which were more prevalent in the low deprivation group. The number of problems patients came to the consultation to discuss were slightly higher in the high compared with the low CARE groups. However, how well the patient reported knowing their GP (relational continuity of care) and the patient's expectations of involvement in decision making were similar in the high and low deprivation groups (Chapter 7).

The differences detected in age, gender and multiple morbidity were taken into account by including them in an analysis of potential confounders, the results of this analysis showed that these variables did not affect the significant results found between the high and low deprivation groups.

It was also noted that although the consultation lengths were not significantly different, the consultations were on average longer in the high compared with the low CARE consultations in both the high and low deprivation groups.