DEPRESSION IN CANCER PATIENTS: AN EXAMINATION OF THE ROLE OF SELF-EFFICACY FOR COPING WITH CANCER AND DISPOSITIONAL OPTIMISM.

And Research Portfolio

Part One

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1. SMALL SCALE SERVICE EVALUATION PROJECT

AN EVALUATION OF THE CASELOAD AND CASEMIX OF A CLINICAL PSYCHOLOGY SERVICE

Written in accordance to guidelines for submission to: Journal of Mental Health

(appendix 1.1)

RUNNING HEAD: AN EVALUATION OF CASELOAD AND CASEMIX

ABSTRACT

The caseload and casemix of an area wide psychology service was compared across time to examine whether there was a proportionate increase of Reasons For Care within the caseload which were more demanding of time in general. All the referrals received by the service during two 18-month cohorts were compared in terms of client problem, Care Aim and time in contact.

The overall number of referrals received by the service in Cohort Two had increased. The proportionate frequency of referral of certain Reasons For Care had changed significantly. There were less anxiety, phobias, and addiction referrals. There were also significantly more Anger and Depression referrals. In Cohort Two there was significantly more use of Assessment as a Care Aim and significantly less use of Problem Resolution.

Eating Disorders and Relationship/Social problems consistently employed most time in contact across Cohort One and Two. The evaluation of caseload and casemix across time revealed that there was not a proportionate increase in Reasons For Care which were more demanding of time in Cohort Two. During Cohort Two increased demand was met in a shorter amount of time, this may have been due in part to increases in staff and the use of brief interventions where possible. Further service level agreements could consider head counts, proportions of specific Reasons For Care and the provision of long or short-term therapies to prevent excessive demand and increase clinical and cost effectiveness.

Introduction

Background

The number and type of referrals received by a clinical psychology service, has a direct impact on the operation of the service. Similarly the range and size of caseload of a service at any given point in time significantly influence practical aspects of service delivery, effectiveness and outcome.

In the current climate, government policies have continued to encourage service level agreements between Health Boards and providers, involving stipulated referral numbers and reduced waiting times. The result in some cases has been an increase in pressure on services to see as many patients as possible and to increase throughput. This has led to a greater emphasis on clinical and cost effectiveness within the profession (Kowalksi, 1991).

Referrers, often unaware of the resource limitations of the psychology service, refer increasingly regardless of available resources. This creates long waiting lists and very large caseloads. Despite direct clinical work only being a part of psychologists' workload, it often forms the greater part. This results in difficulty in prioritising any other professional activities, such as research and supervision (Norcross et al.,1992).

Anciano and Kirkpatrick (1990) reflected this view, they found psychologists received an "overwhelming" amount of direct clinical work, which generated higher caseloads and time management pressures. This finding has been replicated in other parts of the country (Carr 1990, Newnes 1993).

Due to the fact that clinical work often forms the greater part of any clinical psychology service, the NHS executive has issued a mandate for clinical psychology services to undertake clinical audit (DoH, 1989). Despite this, there has been little in the way of published literature on clinical audit in the UK (Cape, 1995b), and even less focusing on caseload and case-mix.

Health commissioners and providers cannot negotiate meaningful service agreements without further understanding of the implications of caseload and case-mix, in terms of client populations, presenting problems and outcomes of psychological interventions. Hill et al. (1999) who recently undertook a service wide clinical audit demonstrated clearly why caseloads cannot be determined by head counts alone. They found that a significant proportion of cases referred to their service had three or more referral problems (nearly half (47%) of referrals to Adult Mental Health AMH speciality, 35% of Child and 29% of Learning Disability (LD) referrals). These figures indicate a high level of complexity in terms of the number of pre-intervention symptoms, and time commitment for intervention in a large proportion of cases. Hill et al. also identified that within more than a third of cases additional problems arose in the duration of contact, thus rendering it virtually impossible to predict duration and frequency of intervention and placing unexpected and unresourced demands on the service.

Evidence from the Psychotherapy Review (NHSE, 1996) suggests that some psychological therapies work better for particular disorders. It is only by exploring caseload and case-mix that psychology services can estimate the proportion of those disorders requiring either long term maintenance therapies, or shorter term “curative” approaches. Thus enabling them to negotiate more meaningful service agreements in terms of time commitment, clinical and cost effectiveness.

The current study is an evaluation of the referrals to and caseload of, the Consulting and Clinical Psychology Services (CCPS), which is the NHS area wide clinical psychology service for Ayrshire and Arran. Throughout its history CCPS has maintained a relatively high level of direct clinical work across the service. Increasingly clinical psychologists have gained the impression that the caseloads they manage are changing towards greater complexity, which can be defined in terms of proportionately more time consuming referral problems.

EPPIC Care Framework

In the period of 1993/94 CCPS took the lead national role as demonstrator site for the development of the EPPIC (effective purchasing and providing in the community) minimum data set which defines a broad range of clinical psychological work (Wight & McPhail, 1995). The minimum data set encompasses; patient details, first contact and discharge dates, referrer details, main Care Aim coupled with main Reason For Care, recording of contributory factors and the main interventions employed. (see Appendix 1.2)

The maintenance of a patient database within CCPS made it possible to examine the accuracy and validity of the impression that caseloads are changing towards greater complexity. The database provided monthly updates on patients seen within the service. Recording of the EPPIC minimum data set on to the computerised database was completed for all patients seen between October 1993 and March 1998 (Unfortunately due to the lack of resources and funding data collection ceased in March 1998).

An earlier unpublished study (Development of a costing system for CCPS) examined clinical contact data over an 18-month period. This study highlighted that a mixed caseload of client problems across all services could include a wide range of time commitments and that the variation can be significantly high across different problem types.

Current Study

The aim of the current evaluation was to examine whether referrals to clinical psychology have become more complex, in that they are more demanding of time in general. Two 18-month cohorts of referrals to CCPS were compared in terms of Care Aims, client problems, and time in contact. Comparison of the proportionate frequency of referrals and their relative time commitments was made across the initial (Cohort One) and current cohort (Cohort Two) to investigate whether there has been any change over time.

Method

Participants

All patients referred to the Area Psychology Service (including referrals to Adult Mental Health, Community, Organisation, Counselling Psychology, Child Health, Elderly Care, Learning Disability, Health Psychology and Addictions) were logged onto 2 databases between 1993 and 1998. The database was re-designed between 1995 and 1996, using the same categories thus creating two separate, but related databases. Recording of the EPPIC minimum data set on the computerised databases was completed for all patients seen between October 1993 and March 1995 and between October 1996 and March 1998.

The Minimum data set refers to two categories:

- The Reasons For Care/Detailed Formulation category describes problems or disorders in psychological terms, which largely relate well to the definitions within DSM IV (see Appendix 1.3).
- The Care Aim category reflects the range of "Aims of Intervention" in Clinical Psychology (see Appendix1.4).

In each case the psychologist involved, categorised the patient's main Reason For Care and main Care Aim.

Missing data: Psychologists and secretarial staff logged data on to the PC - In both cases there was missing data on the computer.

Design

The current research questions were derived from an earlier study that examined clinical contact data over an 18-month period (October 93-March 95). That data set is referred to as Cohort One, and provided a breakdown of the relative frequency of the Reasons For Care across all referrals to the psychology service, as well as an analysis of the proportionate time commitments for a range of Reasons For Care. Cohort Two refers to all referrals between October 1996-March 1998.

For the 1996-98 data, matrices were created, which contained frequency data for the minimum data set (Care Aim x Reason For Care), and time-in-contact data for each Care Aim x Reason For Care. The cases referred to in this data set were those that were ongoing and newly referred and discharged within Cohort Two. Analyses of the frequency and time data from Cohort Two were compared to the baseline data set i.e. Cohort One, to establish whether there had been any change over time.

Approach to Data Analysis

The data were analysed using descriptive statistics such as frequencies, percentages, and means. Certain data were also plotted graphically. Categorical data were compared using chi-square analyses.

Results

Frequency and proportion of Reasons For Care within caseload

To examine whether the absolute or proportionate frequency of Reasons For Care arising in the caseload has changed over the two cohorts, the primary Reason For Care categories in which patients are represented only once were examined. The absolute and proportionate frequency of ongoing and new referrals for every specific Reason For Care for Cohort One and Two are contained in Table 1.

INSERT TABLE 1

The absolute numbers refer to the total number of referrals falling within a certain formulation category (main Reason For Care). Both the absolute number of referrals received by the service and the number of referrals per Reason For Care has increased from Cohort One to Cohort Two. However as the number of ongoing and new referrals within the caseload differ across both cohorts, the proportionate frequency of the Reasons For Care occurring within each cohort was also examined.

Chi square analyses comparing the distributions in Cohort One and Two found significantly more referrals in Cohort Two for Anger ($\chi2 = 115.9$, df = 1, $p < 0.05$), Depression ($\chi2 = 48.51$, df =1, $p < 0.05$) and Relationship/Social Problems ($\chi2 = 5.67$, df = 1, $p <0.05$). There were also significantly less Anxiety and Phobias ($\chi2 = 72.2$, df = 1, $p < 0.05$) and Addictions ($\chi2 = 131.04$, df = 1, $p < 0.05$).

Frequency and proportion of Care Aims employed

In order to evaluate if there has been any change in the usage of the main Care Aims across the two cohorts, the main Care Aims employed and the proportionate use of these across all Reasons For Care was examined in both cohorts. As only main Care Aim categories are being examined, patients are represented only once in the table below (see Table 2).

INSERT TABLE 2

The main Care Aims most frequently employed in Cohort One were Problem Resolution, Assessment, Rehabilitation and Enabling. In Cohort Two those Care Aims most frequently employed by psychologists were Assessment, Problem Resolution, Rehabilitation and Enabling.

Chi square analyses revealed that usage/employment of main Care Aims had changed significantly between Cohort One to Two. In Cohort Two there was significantly more usage of Assessment ($\chi 2 = 246.94$, df = 1, $p < 0.05$), Enabling ($\chi 2 = 79.21$, df =, $p < 0.05$), Support ($\chi 2 = 69.72$, df = 1, $p < 0.05$) and Rehabilitation ($\chi 2 = 5.36$, df =, $p < 0.05$) as Care Aims, and significantly less use of Problem Resolution as main Care Aim ($\chi 2 = 675.98$, df = 1, $p < 0.05$).

Time in contact across Reasons For Care

In order to investigate whether time in contact per Reason For Care had changed, the mean time in face to face contact (for a completed treatment episode) across the Reasons For Care in Cohort One and Two was examined. One time unit equates to 15 minutes(see Figure 1).

INSERT FIGURE 1

In Cohort One it was established that certain Reasons For Care were more demanding of time than others. PTSD, Relationship/Social problem, Problems related to Physical Illness, Eating Disorders and Behavioural/Movement Disorders all required more time in face to face contact with psychologists on average. In Cohort Two mean time in contact employed decreased an all Reasons For Care with the exception of OCD, Personality Disorder, Addictions, Sleep Disorder and Development/Speech in which mean time in contact had increased marginally from Cohort One to Two. Those Reasons For Care which were more demanding of time in Cohort two were OCD, Relationship/Social Problems, Behaviour/Movement Disorder and Eating Disorder.

An inferential test such as independent t test would have demonstrated whether mean time in contact had changed significantly over Cohort One and Two, however this test could not be carried out due to the format of the raw data in Cohort One.

The total number of time units used overall in each cohort was examined. In Cohort One and Two 36,827and 27,914 time units were employed respectively (1 unit = 15 minutes and I appointment session is the equivalent of four time units, I.e. one hour).

Proportionate Amount of Time in contact

In order to examine whether there was an increase in the proportionate amount of time in contact employed by Reasons For Care across cohorts, this was calculated by dividing the total number of time units employed by all the cases in the cohort overall (all Reasons For Care) by the total time units employed by all the cases in an individual Reason For Care. Table 3 Highlights whether there has been any change in the amount of time employed by the Reason For Care categories which had employed most time in contact (per whole treatment episode) in Cohort One and also highlights those Reasons For Care employing proportionately more time in Cohort Two.

INSERT TABLE 3

The Reasons For Care which employed most time in contact proportionately in Cohort One were PTSD, Problems relating to Physical Illness, Relationship/Social problems and Eating Disorders. The Reasons For Care which have consistently employed more time in contact across Cohort One and Two are Relationship/social and Eating Disorder. Additionally, OCD and Behaviour Movement disorders also employed proportionately more time in Cohort Two

In order to evaluate whether the proportion of completed cases changed across cohorts and whether or not there were proportionately more cases requiring longer term contact in Cohort Two, the percentage of cases where treatment was completed by the end of the two cohorts respectively was examined. By the end of Cohort One, 62% of referrals within the 18-month caseload were completed and discharged. Similarly by the end of Cohort Two, 66.5% of the referrals in the caseload were discharged.

Comparison of the total number of cases with the number of completed cases for every Reason For Care category in Cohort Two highlighted the distribution of incomplete treatment episodes across Reasons For Care (see Figure 2).

INSERT FIGURE 2

Figure 2 highlights that Relationship / Social problems, Anger, OCD and Anxiety & Phobia had the lowest proportion of completed cases, approximately 50% for each Reason For Care.

Discussion

The purpose of the current evaluation was to examine the clinician impression that referrals were becoming more complex, in that they were becoming more demanding of time in general and proportionately speaking, arising more frequently in the caseload.

Proportionate frequency of Reasons For Care arising in the caseload/cohort

The increase in the overall number of referrals in Cohort Two could be due to a number of factors, including increasing demand for psychology services as people became more aware of psychological problems. The sharp rise could also be due to the longer tenure and establishment of the consulting and clinical psychology services within Ayrshire and Arran, and their uptake by Trusts, GP's and GP Fundholders (CCPS just been re-configured at the time of the first cohort). The increased referral rate could also be due to an increase in the number of WTE qualified psychologists on staff in Cohort Two.

In terms of proportionate frequency of Reasons For Care arising significantly more or less in Cohort Two, despite a 10% decrease, Anxiety and phobias remained the most frequently referred Reasons For Care. The significant decrease in numbers of Addictions was due in part to the departure of a specialist psychologist who was not replaced after Cohort One. Increased familiarity with the EPPIC categories could account for the significant decrease in numbers of cases labelled Other in Cohort Two. The Proportionate frequencies of Anger and Depression had risen. The introduction of a local guideline for the management of depression in primary care could account for increased referrals. The 1993 Clinical Resource Audit

Group (CRAG) issued a consensus statement on the recognition and management of depression. This suggested early use of antidepressant medication and referral for cognitive therapy for patients who posed any risk for self-harm, had more complex problems, or who presented with a chronic relapsing condition. In the case of anger, the introduction of group work targeting the treatment of anger occurring between 1996-98 might account for the increase in referrals.

Proportionate frequency with which Care Aims employed

Assessment was the Care Aim most frequently employed in Cohort Two. Its usage had risen significantly from 16.55 to 35.4%. Greater focus within the psychology service upon the assessment and formulation stage, in line with objectives set by the clinical effectiveness initiatives within the Ayrshire & Arran Trust could account for this. Significantly an Assessment Clinic initiative was commenced during Cohort Two which would also account for the increase in the reported use of this Care Aim. The increase observed could also have been due to inappropriate usage and reporting of the Care Aim. Use of Problem Resolution as a main Care Aim had decreased considerably in Cohort Two. The aim of restoring patients to their normal level of health or ability is ambitious (only appropriate for certain disorders), and increased familiarity with the core definition of this Care Aim may have resulted in more appropriate and limited usage in the second cohort.

Proportionate amount of Time employed by Reasons For Care and corresponding frequency of referral.

PTSD employed the most time in face to face contact proportionately in Cohort One. According to the clinical psychologist's impression of increasing complexity, there was an expectation that there would be an increase in the frequency of these referrals in Cohort Two. However, there was only a slight increase in referrals and no corresponding rise in time employed for this Reason For Care. The proportionate amount of time employed for PTSD's has actually decreased by 8% over the two cohorts. This may have reflected a change in treatment approach by Psychologists. It should be noted that by the end of the 18 months, treatment remained incomplete in 35.6% of PTSD cases in Cohort Two. In Cohort Two OCD's were notably employing more time in contact than any other Reasons For Care. This is not a surprising result, as OCD is a complex and chronic disorder, which we might expect to demand more time in contact.

According to the current evaluation, those referrals which were most demanding of time in Cohort One had not proved so in Cohort Two with the exception of Eating disorders and Relationship/ Social Problems. These had not increased considerably in terms of proportionate frequency of referral either. Those Reasons For Care most demanding of time in Cohort Two were not most frequently referred either. Therefore the impression that the proportion of Reasons For Care within the caseload which were very demanding of time was increasing has not been validated by this evaluation. However, 34.5% of all the cases seen were still in treatment, as were 38% of cases by the end of Cohort One. It cannot be inferred that these were cases that required longer-term therapy, as they may have been referred and seen at any point within the 18-month period. However this may have resulted in an underestimation of complexity in the caseload.

A closer examination of the distribution of incomplete treatment episodes across Reasons For Care demonstrated that Relationship/Social problems and OCD, the Reasons For Care which employed most time in contact in Cohort Two have the highest proportion of incomplete cases. The limitation of only examining time data within an 18-month period may be the exclusion of the negative extremes of complexity, chronicity and severity, which would mediate more time in contact.

Whilst there was an increase in the absolute number of referrals in Cohort Two, there was a decrease in the mean number of time units employed overall in Cohort Two. The increase in number of psychologists from 16 WTE in Cohort One to 18 WTE and the additional skill mix of 2 Cognitive Behaviour therapists, and 1 counsellor could have been partly responsible for shorter time spent on cases, as introduction of skill mix can lead to more tailored and efficient interventions, requiring less time. Also during 1996-98 there was increased focus both nationally and locally on waiting times, with associated pressure on this service to increase throughput.

Whilst acknowledging the results of the current evaluation, the influence of certain factors in the interpretation of these results must also be considered. It was widely agreed that the two categories, which were combined to create the minimum data set i.e. Reason For Care and Care Aim, require further qualification. These parameters have not been subject to a validity/reliability study, therefore the inter-rater reliability of psychologists in assigning Reasons For Care or choosing Care Aims cannot be determined. This has possibly been a major confounding factor within the current investigation and consequently there is a need to be circumspect in the appraisal of the results of the current evaluation. If clinical audit is to be used to gain insight into caseload and case-mix and act as an effective influence on negotiating more meaningful contracts, it is vital to arrive at a coding system, which has a high degree of consensus, and is demonstrably reliable and valid for comparison across studies.

The results of the current evaluation highlight the fact that there is increasing demand for the psychology service. During Cohort Two the psychology service was able to absorb the increased rate of referrals and increase throughput in less time due to staff increases and by adopting a policy of minimal intervention. Robertshawe and Sheldon's (1992) findings encapsulate the evaluation of Cohort Two. They reported that when a psychology service is working to capacity, it can only take on new referrals faster than it can discharge them if individual sessions are shorter, and the average number of sessions per individual is reduced. However, this is only feasible in the short term.

In a climate where clinical and cost effectiveness issues are paramount, psychology services need to investigate issues, which may influence caseload size and casemix. Evidence provided by The Psychotherapy Review (NHSE, 1996) suggests that certain psychological therapies work better for certain disorders. With some Reasons For Care, change requires long term maintenance and others are more amenable to shorter-term curative approaches. Service agreements for the provision of psychological services could consider head counts, proportions of specific Reasons For Care, and the provision of long or short-term therapies in order to be meaningful and prevent excessive demand, increased waiting lists, and neglect of other professional activities.

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Table 1 Absolute and proportionate frequency of referrals per Reason For Care

REASON FOR CARE	**COHORT ONE (ongoing and new referrals 31/3/93 – 31/10/95)**		**COHORT TWO (ongoing and new referrals 31/3/96 – 31/10/98)**	
	N =	**% OF TOTAL REFERRALS**	**N=**	**% OF TOTAL REFERRALS**
Anxiety & Phobia	915	40.6 %	1252	30.1 %
PTSD	63	2.8 %	205	4.9 %
Anger	77	3.4 %	469	11.3 %
Personality Disorder	25	1.1%	28	0.7 %
Depression	309	13.7%	885	21.3%
OCD	25	1.1%	50	1.2%
Behaviour/Movement	61	2.7%	76	1.8 %
Addictions	149	6.6%	56	1.3 %
Eating Disorder	33	1.5%	73	1.8%
Sleep Disorder	13	0.6 %	13	0.3%
Sexual Disorder	23	1.0%	46	1.1 %
Elimination	23	1.0%	43	1.0%
Relationship/Social	289	12.8%	624	15.0%
Dev'mental/ Speech	87	3.9%	213	5.1 %
Problems due to Physical Illness	118	5.2%	129	3.1 %
Other	45	2%	0	0
TOTAL	2255	100%	4162	100%

Table 2. Frequency and proportion of Care Aims employed across Reasons For Care in Cohort One and Cohort Two

CARE AIM	COHORT ONE		COHORT TWO	
	N=	% proportionate frequency	N=	% proportionate frequency
ASSESSMENT	372	16.5%	1474	35.4%
ENABLING	150	6.7%	592	14.2%
REHABILITATION	290	12.9%	629	15.1%
MAINTENANCE	58	2.6%	105	2.5%
SUPPORT	38	1.7%	265	6.4%
PROBLEM RESOLUTION	1318	58.5%	1088	26.1%
PALLIATIVE CARE	0	0%	1	0.02%
HEALTH PROMOTION	0	0%	8	0.2%
TOTAL	2226	100%	4162	100%

Table 3. Proportionate Time in Contact for Reasons For Care employing more time in Cohort One and Two.

Reasons For Care	% time employed	
	Cohort One	Cohort Two
PTSD	13.6	5.6
OCD	5.5	11.3
Relationship/social problems	10	10.8
Problems relating to physical illness	10.6	6.6
Behaviour/Movement disorders	7.7	10.2
Eating disorders	8.5	8.9

Shaded cells represent those Reasons For Care employing proportionately more time in a particular Cohort.

FIGURE 1 Mean Time in Face to Face Contact Per Reason for Care (mean time for a whole treatment episode per case)

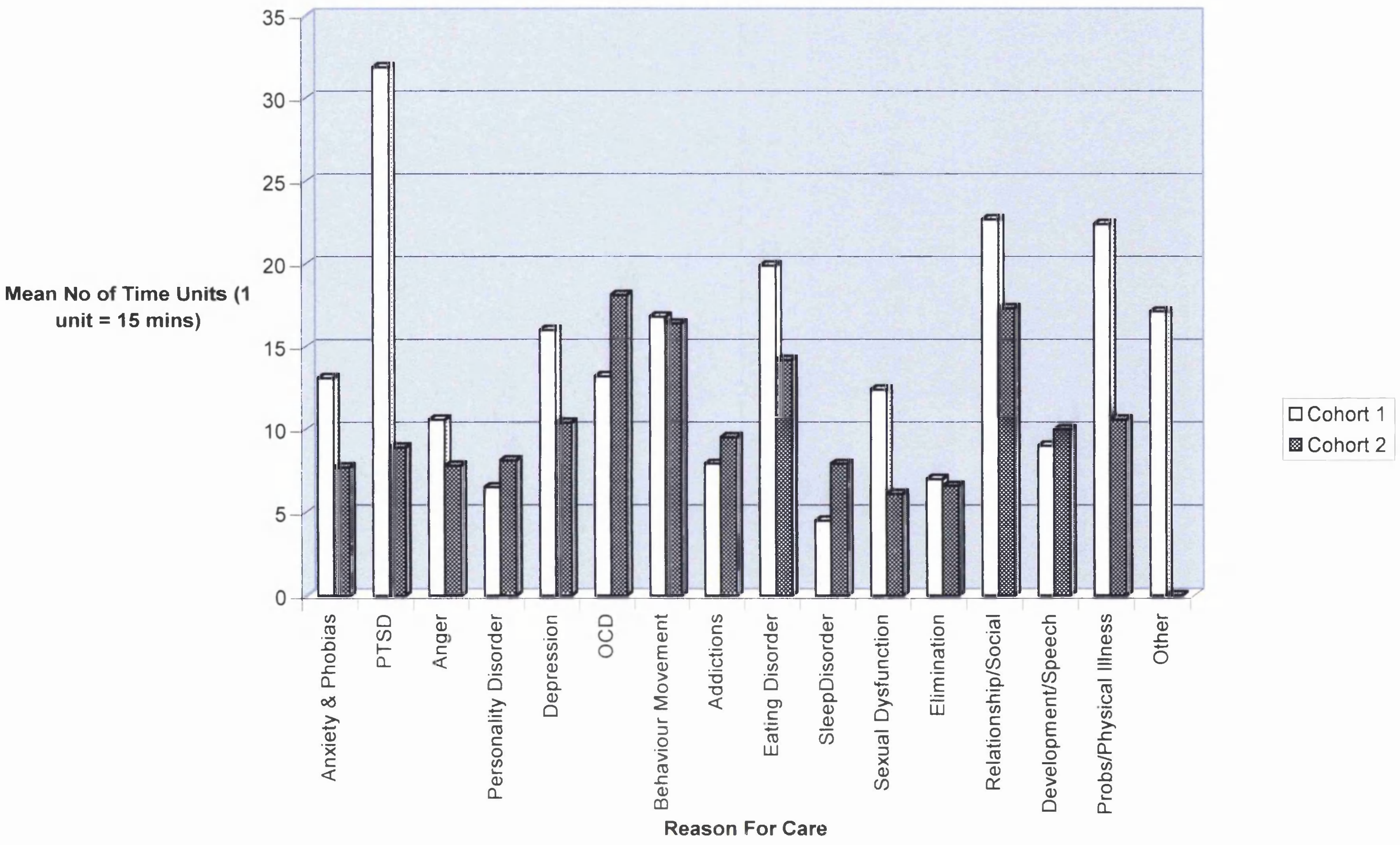
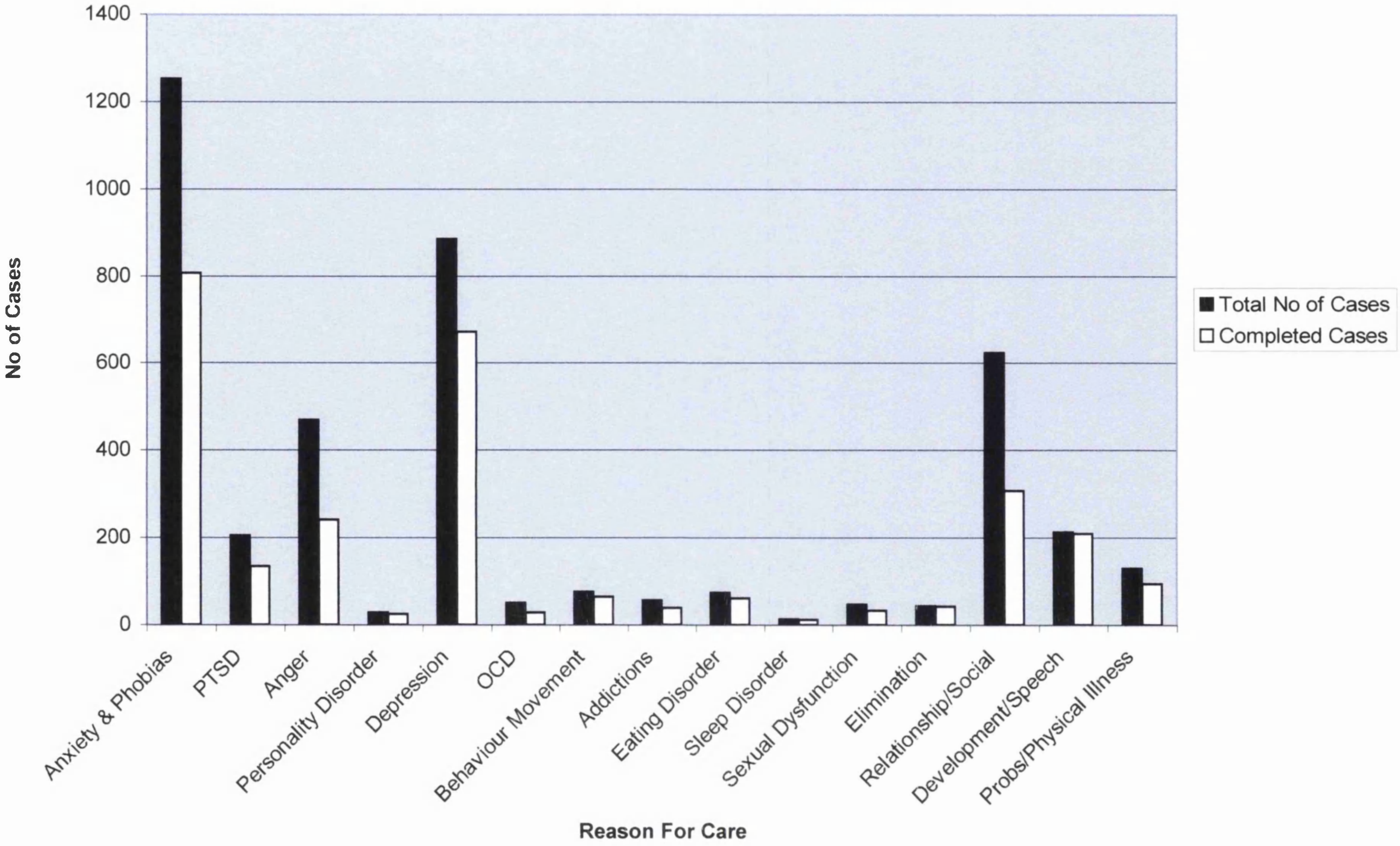


FIGURE 2 Comparison of Total Vs Completed Cases Per Reason for Care (Cohort Two)



2. LITERATURE REVIEW

Psychological Adjustment to Cancer: The Relationship between Self-efficacy for coping, Dispositional Optimism and Depression – A Review of the Literature.

Written in accordance with the guidelines for submission to Psycho-Oncology

(see Appendix 2.1)

ABSTRACT

Self-efficacy for coping and dispositional optimism [DO] have been highlighted as possible determinants of adaptive coping in cancer. The extent to which these two factors influence or mediate depression in cancer patients is unknown. It has not been established if their effects are additive or independent. The aim of this review is to highlight the relationship of self-efficacy and DO and depression in non-clinical samples and then focus on their role in psychological adjustment in cancer and how they achieve their effects. Electronic databases and review articles were searched for studies pertaining to the subject of this review.

High levels of self-efficacy protect individuals from dysphoria in reaction to stressors and DO acts as a stress buffer. Self-efficacy for coping in cancer has only been studied in one particular domain of coping (self-efficacy for cancer related symptoms) and was related to affective state. DO has been related to psychological adjustment in cancer via its effects on coping.

Research is required to establish if DO's protective role in psychological adjustment will be altered if self-efficacy for coping with cancer is low and to investigate how self-efficacy for coping will relate to depression if there are no positive outcome expectancies due to low DO. It will also be important to study the relationship between particular efficacy beliefs for coping with all the major tasks faced by cancer patients and depressive symptomatology. Implications for psychological interventions for the treatment of depression in cancer patients will be discussed.

INTRODUCTION

Research on psychological aspects of cancer has become increasingly prevalent in the past few decades. Some advances have been made in describing the difficulties cancer patients face, and in examining the processes of adjustment (Anderson, 1989).

Recently two psychological factors have been highlighted as possible determinants of adaptive coping in cancer. Evidence from independent studies suggests that self-efficacy and Dispositional Optimism [DO] respectively influence psychological adjustment in response to negative life events or stressors in non-clinical samples (Carver and Gaines, 1984; Martin and Flett, 1996). Less attention has been paid to these constructs in relation to psychological adjustment to cancer, (Carver et al., 1993; Lev, 1997). The extent to which these two factors influence or mediate depression in cancer patients is unknown. It has not been established whether their effects are additive or independent on outcomes such as depression, as both have not been studied simultaneously specifically in relation to depression in cancer patients.

This review therefore aims to briefly highlight the relationship of self-efficacy and DO and depression in non-clinical samples and discuss how these variables achieve their effects. In turn, the review will focus on the impact of these factors on psychological adjustment in response to cancer, and models, which may elucidate their role. A subsidiary aim is to review the literature on illness representation [IR] in chronic illness and highlight it's potential role in adjustment to cancer, as IR have never been studied in relation to depression in cancer. Further links and questions will also be generated which relate to treatment interventions for depression in cancer patients.

Cancer

Cancer is a disease of cells proliferating with disregard to the body's regulatory signals that causes tumours or neoplasms, which are either benign or malignant. Cancer is now the second leading cause of death in the UK (DoH, 2000). There are over 200 different types of cancer, but just four of them - lung, large bowel, breast and prostate account for half of all new cases and are responsible for over half of all cancer mortality (Cartmell and Reed, 1995). Cancer affects every age group, although 50% of all cancer deaths occur in persons over 65 years of age. Studies indicate that cancer diagnoses have increased over the past five years with advances in early detection. (TSO, 1998; GRO for Scotland, 1998; and GRO for Northern Ireland, 1998).

Cancer and Depression

Cancer is associated with a host of enduring negative emotional responses, including anxiety and depression (Taylor and Aspinall, 1990; Mermelstein and Lesko, 1992; Barraclough, 1994; McDaniels et al., 1995). Considerable evidence exists which suggests that depression is the most common disturbance secondary to cancer (McDaniels et al., 1995). The most comprehensive study of psychological morbidity in cancer to date was reported by Derogatis et al. (1983). They reported the prevalence of adjustment disorder with depressed or mixed emotional features to be 25% and a prevalence of major depression of 6% in their sample. More recent studies suggest considerable diversity in prevalence rates. Massie and Holland (1990) reported rates of at least 25% in a sample of hospitalised cancer patients. Ibbodson et al. (1996) controlled for disease and treatment factors and using a diagnostic clinical interview found 17% of the sample had a major depressive illness. Chocinov et al. (1994)

found a combined prevalence rate for minor and major depression of 26% using Research Diagnostic Criteria and Endicott criteria.

Despite depression being such a widespread problem in cancer patients, it is estimated that 20-25% of cancer patients suffer often unrecognised and untreated long-term depression (Bottomley, 1998). One explanation for this phenomenon is that depression is one of the most difficult psychological problems to identify. It is difficult to know when the “normal” sadness response to cancer becomes “abnormal”. Furthermore, treatment side-effects may confound the identification of depression. Taylor and Aspinall (1990) suggested that depression is undetected due to the common and misguided assumption that depression is a normal and inevitable reaction to threatening illness.

Depression is important not only for the distress it produces, but also because it may have an impact on long-term rehabilitation and recovery (Primeau, 1988). Depressed stroke patients have longer hospital stays (Cushman, 1986), show less motivation to undergo rehabilitation (Thompson et al., 1989), and are less likely to maintain the gains made during rehabilitation than non-depressed patients (Sinyor et al., 1986). Depressed Myocardial Infarction patients are also more likely to be rehospitalised (Stern et al., 1977).

Cancer and Coping

Cancer requires patients’ to call upon coping resources to meet each new challenge. Lazarus and Folkman (1984) defined coping as cognitive and behavioural efforts to manage demands appraised as taxing or exceeding resources. Significant numbers of people with cancer often experience substantial difficulties in coping with their illness (Greer, 1991). Research on coping with cancer indicates that active coping styles and perception of control are associated with more positive adjustment to the disease than coping styles characterised by avoidance (Dunkel-Schetter et al., 1992). Various types of coping strategies have been identified in cancer patients, which affect adjustment to cancer differently. Osowiecki and Compas (1999) examined relationships between coping, perceived control and symptoms of anxiety and depression in their longitudinal study of individual coping and adjustment to breast cancer. They found that Problem-Focused Engagement coping involved problem-solving and cognitive restructuring and Emotion-Focused Engagement coping involved emotional expression and seeking social support, and both were associated with lower psychological distress when faced with cancer. However Problem-Focused Disengagement which was characterised by avoidance and wishful thinking and Emotion-Focused Disengagement coping which is characterised by social withdrawal and self-criticism were associated with higher emotional distress during adjustment to breast cancer.

Parle and Maguire (1995) explored relationships between cancer, coping and mental health. They highlighted that a major limitation of the research on coping process among cancer patients is the predominance of research on the relationships between coping responses and psychological outcomes. These designs have not adequately represented the complexity and diversity of demands associated with cancer and have neglected the role of appraisal in the assessment of the relationship between coping and mental health. Within Lazarus and Folkman's model of coping, coping efforts are contingent upon the person's appraisal of: (a) the degree of threat posed by the demand (primary appraisal); and the resources believed to be available to manage the demand (secondary appraisal). In preliminary results from a prospective study of affective disorders among cancer patients (Parle, Jones and Maguire, 1994), appraisal, coping responses, and coping-efficacy were all found to be significant predictors of subsequent affective disorders. Importantly patients who believed they could do nothing to manage the demands of cancer were at greater risk for subsequent affective disorder. Therefore examining the type of coping response in regard to secondary outcomes such as depression without regard to secondary appraisals such as self-efficacy beliefs is clearly not adequate.

Self- efficacy

The construct of self-efficacy was developed by Bandura in the 1970's as a component of social learning theory. He defined perceived self-efficacy as people's beliefs about their capabilities to produce designated levels of performance that exercise influence over events that affect their lives. The amount of effort expended, determination and affective response to accomplish a task depends on perceived self-efficacy (Bandura 1982, 1994).

Efficacy beliefs are thought to operate in concert with other socio-cognitive determinants in governing human adaptation and change. Perceived self-efficacy operates within a broad network of socio-cultural influences. Once formed, efficacy beliefs regulate aspirations (Bandura et al., 1997), choice of behavioural courses (Bandura, Adams, Beyer, 1977), mobilisation and maintenance of effort and affective reactions (Bandura, 1997). Efficacy beliefs are proposed as a major basis of action. People guide their lives by their beliefs of personal efficacy. Self-efficacy beliefs are thought to exercise influence over regulation of one's own motivation (Bandura, 1988), thought processes (Bandura, 1989a), affective states, and actions. People's beliefs in their efficacy have diverse effects. Such beliefs are believed to influence the courses of action people choose to pursue, how much effort they put into given endeavors, how long they will persevere in the face of obstacles and failures, their resilience to adversity, how much stress or depression they experience in coping with taxing environmental demands (Bandura, 1988c; Kavanagh, 1983), and the level of accomplishments they achieve. Efficacy is a generative capability in which cognitive, social, emotional and behavioural subskills must be organised and effectively orchestrated to serve innumerable purposes. There is a marked difference between processing subskills and being able to integrate them into appropriate courses of action and to execute them under difficult circumstances. Perceived self-efficacy is concerned not with the number of skills we have, but with what we believe we can do with what we have under a variety of circumstances.

The association between self-efficacy and depression in the general population is well established. (Rosenbaum and Hadari, 1985; Goozh and Maddux, 1992; Martin and Flett, 1996). Those with high perceived self-efficacy will approach tasks with a competitive sense towards mastery and positive self-esteem. In contrast low perceived self-efficacy is associated with incompetence, low self-esteem and depression (Bandura, 1994). Findings support Bandura's (1977) hypotheses that depression will occur when either self-efficacy or outcome expectancy is low (Rosenbaum and Hadari, 1985; Goozh and Maddux, 1992; Martin and Flett, 1996).

High generalised self-efficacy (GSE) has predicted lower depression (Olioff, Bryson and Wadden, 1989). In theory this variable may have the capacity to buffer the effects of stress. Lightsey (1997) tested whether GSE, positive thoughts, optimism and self-mastery may act as stress buffers in response to negative life events. It was observed that when exposed to stressors, undergraduate students with higher GSE may be less dysphoric than persons with lower GSE, suggesting that GSE acts as a stress buffer. This may be due to a willingness to engage in active coping efforts, tenacity of coping efforts once initiated and success of coping efforts, thereby avoiding depression (Eden and Aviram, 1993)

Self-efficacy has a major impact on adjustment to chronic illness (Beckham et al., 1987, 1994, 1995). Self-efficacy influences adjustment because it mediates the relationship between health related stressors and outcome variables. Increased self-efficacy in cancer patients is associated with decreased physical and psychological symptoms (Lev, 1997).

The role of self-efficacy in coping with cancer and adjustment has been highlighted by studies, which employed efficacy-enhancing interventions. Telch and Telch (1986) compared self-efficacy ratings of distressed individuals with cancer across three conditions, coping skills training treatment versus support group treatment versus no treatment control group. The coping skills training had boosted the cancer patients self-efficacy and in turn reduced distress and created better adjustment. Cunningham, Lockwood and Cunningham (1991) reported significant positive correlations between self-efficacy, mood and quality of life and attributed improvement in these variables to a brief four-week intervention for self-efficacy.

Self-efficacy for coping with cancer is a slightly different construct from self-efficacy per se. It relates to expectations about coping with the major tasks that will confront cancer patients, even if the individual has not yet experienced the problem. It recognises that cancer does not represent a unitary variable and includes a broad range of demands (Dunkel Schetter et al., 1992). The judgements of coping ability elicited are in response to these multiple demands and therefore provide far more reliable and meaningful measures of coping self-efficacy. These expectations are formed via assessment of their own internal resources as well as resources in their environment, which are processed and integrated and regulate their choice behaviour and effort accordingly. Parle and Maguire (1996) studied a construct similar to self-efficacy for coping in their study on maladaptive coping and affective disorders. In this examination of the effects of appraisals of threat, coping responses and resolution of concerns (coping-efficacy) on subsequent mental health; they highlighted the role of appraisal in secondary outcomes in cancer. Primary and secondary appraisals respectively relate to the degree of threat posed by the demand and the perception of ability to manage the threat posed by the demand. The degree of threat appraised, reporting of a helpless response and perceived success of primary responses in resolving concerns all predicted affective disorder. One limitation of this study was that it did not differentiate between primary and secondary appraisals in its analysis. However Parle and Maguire did posit that the helpless coping response was probably more appropriately understood as negative secondary appraisals (perceived ability to manage demands) which were predictive of subsequent affective disorder.

Those patients who perceive themselves as capable of meeting the demands associated with cancer and it's treatment will be able to mount resources to meet the many challenges they face (Grassi et al., 1993; Merluzzi and Martinez Sanchez, 1997). Lower ratings of perceived difficulty of coping behaviours by cancer patients were associated with more positive adaptation to cancer than their counterparts who held more realistic perspectives (Merluzzi and Martinez Sanchez, 1997).

During the development and validation of the Cancer Behaviour Inventory (CBI), a measure of self-efficacy for coping with all the major tasks in cancer, Merluzzi and Martinez Sanchez (1997) investigated the relationship between self-efficacy for coping, adjustment to illness, coping, DO and social support. They reported correlations between these factors and the CBI. Lev et al. (1999) found that both self-care self-efficacy (a person's confidence to perform relevant self-care behaviours to promote health) and quality of life declined significantly with time. Their study also asserted that high self-care self-efficacy and adjustment are associated with improved coping, enjoyment and quality of life. Self-care self-efficacy is therefore clearly differentiated from self-efficacy for coping as the latter relates to more holistic confidence to mount coping resources for the multiple demands associated with cancer and not simply geared to promoting health.

Theoretically self-efficacy operates as a mediating variable because it transforms or changes the relationship between two other variables (Baron and Kenny, 1986). Merluzzi and Martinez Sanchez (1998) propose a self-efficacy mediated model for coping with cancer and AIDS where a number of variables including the impact of disease and treatment on functioning, availability of social support, coping style, personality characteristics, developmental stage and attitudes to disease affect outcomes such as psychological adjustment and quality of life through the mediation of self-efficacy. Many of these variables may also affect the outcome variables directly. The assumption of the model is that self-efficacy may mediate wholly or partially the effects of these predictor variables on outcomes.

The first study investigating the relationship between self-efficacy for coping with cancer and depression in an analysis was conducted by Beckham et al. (1997). They examined the relationship between self-efficacy for coping with cancer related symptoms such as pain, function, and patient cancer adjustment, depression, psychological distress and behavioural dysfunction in male cancer patients. They found that this domain of coping self-efficacy was related to all the adjustment measures, with the exception of depression, where the relationship failed to reach statistical significance. The design of the study did not permit the direction of the relationship between the variables to be determined. Crucially, this study was limited because it only looked at the self-efficacy for coping with cancer-related symptoms and not efficacy expectations across the domains of coping. This study could not reliably and meaningfully assess the relationship between the judgements of coping ability in response to the multiple demands of cancer and depression and adjustment. Simply focusing on one domain underestimates the demands to be met and coping resources needed. If the self-efficacy judgements relating to all the domains were appraised, the demands evaluated would increase substantially and a different relationship to depression may indeed be established.

Dispositional Optimism

Dispositional optimism [DO] is a variable that has been associated with depression in both the general population (Broomberger et al., 1996; Chang, 1998; Puskar et al., 1999) and in cancer patients (Epping-Jordan et al., 1999). DO, a stable personality characteristic, has been defined as the tendency to expect positive versus negative life outcomes (Scheier & Carver, 1992). Regarding DO as a generalised expectancy for positive outcomes (Scheier & Carver, 1995) has important behavioural implications. This construct derives from a general model of behavioural self-regulation (Carver and Scheier 1981, 1982a and 1983) which suggests optimists are more likely to conclude impediments can be overcome. These beliefs and continued efforts to which they give rise should cause optimists to continue striving and deal with problems more successfully than pessimists. Empirical evidence for DO's influence on self-regulation of behaviour is provided by Carver et al. (1979a). They demonstrated how chronic expectancies of being able to cope with a strong fear (of snakes) interacted with self-focused attention to predict overt behaviour. Those individuals holding positive expectancies displayed increased self-attentiveness and enhanced effort to hold snakes.

This construct has widespread utility in the general domain of psychology because it posits that people's actions are greatly influenced by their expectations about consequences of those actions. Therefore DO is highly relevant to a variety of theories of motivated action (e.g., Bandura, 1977, 1986; Rotter, 1954; Seligman, 1975). People's expectancies regarding outcomes are thought to act a major determinant of the choice between two general classes of behaviour: continued striving versus giving up and turning away. Paralleling this disjunction in behaviour is a disjunction in affect (Carver and Scheier, 1990a, 1990b). Favourable expectancies are proposed as giving rise to positive affect and vice-versa. Scheier and Carver (1985) posit that global expectancies are relatively stable across time and context and they form the basis of an important characteristic of personality. Peterson and Bossio (1991) describe this cognitive construct as being related to the vigour and passivity with which individuals face the demands of life. One of the most prominent models of personality that incorporates measures of positive cognitions is the attributional style model (Peterson and Seligman, 1984). Optimistic attributional style was developed from the attributional reformulation of the learned helplessness model as a method of explaining individual differences in response to negative events (Abramson, Seligman and Teasdale, 1978). This model posits that the extent to which generalised expectancies are negative, internal and global, bad physical and mental health consequences will follow, a response style termed 'pessimistic explanatory style'.

DO plays a protective role in long-term psychological outcomes because it acts as an adaptational mechanism in the face of a wide variety of significant stressors. DO causes people to be more persistent and work harder at attaining goals. It facilitates generation of more effective sub-goals and more rapid initiation of strategies to manage problems sooner. A number of prospective studies have examined the effect of DO on subjective wellbeing when stressors are present. Carver and Gaines (1987) studied the development of post-partum depression in women. They reported that optimism was associated with resistance to post natal depression and decreased the severity of depression post delivery. Scheier, Weintraub & Carver, (1989) examined the influence of DO on the subjective reactions of a group of men over time to coronary artery bypass surgery. They observed that pre-surgically, optimists reported lower levels of hostility and depression than pessimists. In the week following the operation, optimists reported feeling greater relief and happiness. Also optimists reported much more favourable quality of life at 6-months follow up than pessimists.

Research studies have investigated the potential mechanisms by which DO confers positive benefits on physical and psychological wellbeing and how it may mediate psychological distress. It may be the manner in which optimists and pessimists cope with stress that is the mediator of such effects. Scheier, Weintraub & Carver (1985) presented their subjects with a hypothetical event involving a high degree of stress and asked them to imagine their response. Analysis demonstrated that the optimists and pessimists spontaneously employed different coping strategies. Optimism was highly correlated with active coping, complexity of coping strategies and inversely correlated with focusing on emotion, emotional expression, and disengagement from goals. In a similar study Scheier, Weintraub & Carver (1986) found optimism was positively correlated with problem-focused coping in a sample of undergraduates recalling stressful events and their responses.

Coping differences in optimists and pessimists may well underlie the effects of optimism on psychological and physical wellbeing. In their college adaptational study, Taylor and Aspinall (1990) reported that the beneficial effects of optimism operated at least in part through differences in coping. Optimism may serve as a critical coping resource by promoting active problem-focused coping and by reducing the perceived magnitude of the threat.

DO has a demonstrable impact on cancer patients' emotional functioning. Pozo et al. (1990) reported that optimism predicted distress over time in a prospective study of psychological adaptation of women to surgery for early stage breast cancer. Carver et al. (1993) found that differences in coping serve as a mediating mechanism by which differences in optimism influence subjective wellbeing in women with early stage breast cancer. Three reactions were particularly prominent as mediators: acceptance, denial and behavioural disengagement. These three reactions served as mediating routes through which optimism was related to distress. Epping Jordan et al.'s (1999) study investigated whether there are background dispositional factors that specifically predict anxiety and depression in women with newly diagnosed breast cancer. They also investigated change in these processes across time. They also examined whether the relationship of background dispositional factors such as age, cancer stage, education, DO and anxiety and depression was direct or mediated by proximal variables such as intrusive thoughts, avoidance, problem-focused engagement and disengagement and emotion-focused engagement and disengagement coping. They found that the background dispositional factor of DO had a direct relationship to anxiety and depression symptoms at diagnosis and six-month follow-up. However at diagnosis and six-months, high DO also predicted the proximal variable of greater emotion-focused disengagement coping, which in turn predicted higher anxiety and depression symptoms. Therefore DO predicted anxiety and depression directly and was partially mediated via emotion-focused disengagement coping.

Illness Representation [IR]

Patient's cognitive representations of illness and coping behaviours are viewed as particularly important determinants of adaptive coping outcome in chronic illness (Meyer et al., 1985; Petrie and Weinman, 1997). Upon symptom appearance, diagnosis or during the illness experience, individuals construct a representation of their health threat, which influences their behaviour. Leventhal et al's., (1980) self regulation model links IR and coping behaviour to adaptive outcomes. According to this model people create cognitive models of their representations of illness to guide coping and via coping influence adaptive outcomes such as mood and disability. Leventhal and Nerenz (1983) identified five dimensions of this IR in terms of which most people think of their disease. These are identity, cause, consequences, time-line and curability. Weinman et al. (1996) developed the Illness Perception Questionnaire (IPQ), in an attempt to try and understand the nature of illness related coping.

Little data are available on the association between IR's and adjustment among cancer patients. Buick (1997) examined IR of breast cancer patients coping with radiotherapy and chemotherapy and the process of change in IR among these patients. Buick reported that negative illness beliefs were associated with maladaptive psychological responses. It was also observed that schema composed of more moderate or positive illness perceptions contrasted with effects on psychological adjustment with schema composed of the negative dimensions of cancer, as negative perceptions foster-emotion focused and disengagement style coping that results in patients being unable to control the disruption to their life during the course of their illness.

The research on IR to date has neglected the investigation of the association of IR and depression in cancer patients. Moss-Morris et al. (1996) studied variables relevant to depression in chronic fatigue syndrome (CFS). Non-depressed CFS patients held IR characterised by illness identities incorporating a broad range of symptoms. Beliefs about chronicity and consequences were generally negative. Lack of personal responsibility and external attributional style protected their self-esteem. In contrast CFS patients with concurrent depression had the most pessimistic illness beliefs and internal, uncontrollable attributions leading to more helpless illness attributions and lower self-esteem.

Problems with the Research

Many studies are limited by a cross-sectional design, which precludes establishing causality. A cross-sectional design also typically involves measurement at one point in time. This might not yield meaningful measures for less constant variables, such as coping style and self-efficacy, which are not by nature static, as they change according to the demands of the disease and according to our stress appraisals. Longitudinal prospective studies would therefore be more appropriate for systematic investigations involving these variables. Exclusive use of self-report measures to determine coping style and effort is problematic, as the degree to which they reflect actual behaviour is unsubstantiated. Observational studies are needed to validate self-report coping inventories.

Research on the coping process among cancer patients has predominantly investigated the relationships between coping responses and psychological outcomes. In these largely cross-sectional studies, self-report instruments have been used to measure the frequency of a limited range of coping responses in relation to any recent stressful situation, which may or may not be relevant to cancer. The shortcomings of this methodology include the lack of attention given to specific characteristics of cancer as the psychological stressor, and the omission of other coping process variables including appraisals and coping-efficacy. A more rigorous approach to measurement of coping variables involves the use of semi-structured interviews (Parle and Maguire, 1995; 1996).

Few if any studies mentioned in the review investigating the role of cognitive constructs in relation to depression in cancer patients actually sample cancer patients diagnosed with depression. Elevated scores on self-report measures such as the Beck Depression Inventory (BDI; Beck et al., 1961) and Hospital Anxiety and Depression Scale (HADS; Zigmond & Snaith 1983) indicate dysphoria rather than nosologic depression. Most studies also look at somewhat diluted indices of depression, such as psychological distress, helplessness and hopelessness, combined anxiogenic and depressive symptomatology in the form of ratings of affective/emotional distress (Epping Jordan et al., 1999). Therefore we cannot assume that the results generalise to clinically depressed patients (Kendall et al., 1987).

Summary and Conclusion

The construct of self-efficacy has been associated with depression in the general population and in the cancer population (Lightsey, 1997; Lev et al. 1997). As yet in the cancer literature, self-efficacy for coping with cancer symptoms has been the only behaviour-specific efficacy expectation to be directly linked to affective state (Beckham et al., 1997). The relationship between particular efficacy beliefs for coping with all the major tasks faced by cancer patients and depressive symptomatology has yet to be studied.

Prospective studies examining DO's influence on subjective wellbeing in the presence of stressors demonstrate that DO acts as a stress buffer (Carver and Gaines, 1987; Scheier, Weintraub and Carver, 1989). Carver et al. (1993) and Epping-Jordan et al. (1999) demonstrated that optimism is psychologically adaptive and related to overall adjustment in breast cancer patients via its effects on coping.

The constructs of self-efficacy for coping and DO have not been studied together in relation to depression in cancer patients. The importance of studying DO's relationship to depression in cancer patients alongside self-efficacy for coping is emphasised by the possibility of an intrinsic change in DO's protective role in psychological adjustment in cancer directly and via coping strategies if self-efficacy expectations for coping are low. Judgements of little or no ability to mount coping resources to meet the demands of cancer will obviously influence the initiation and use of the coping strategies, which mediate DO's protective role. The converse position is also intriguing in relation to psychological adjustment in cancer patients. If patients have high self-efficacy for coping with the demands of cancer, but low DO, then judgements supporting the ability to cope may not have any influence on coping behaviour. Without generalised expectancy for positive outcomes as proposed by Scheier and Carver (1995) patients may not continue to strive to deal with problems related to cancer and initiate active and complex coping strategies.

Knowledge of the factors associated with adjustment to cancer may be used in several ways. The literature suggests that self-efficacy for coping and DO are useful markers which can help to identify those at risk of developing depression. Increased knowledge of the risk factors for depression should be able to lead on to targeted intervention studies. Knowledge of IR may also provide some indication of the level of psychological and functional adaptation patients maybe able to achieve and therefore aid the development of interventions to facilitate self-management of cancer.

This study has clinical implications, because self-efficacy is not a static characteristic, in theory it can be altered by behaviour, and learned. The CBI assesses efficacy expectations for particular domains of coping, if certain domains are more relevant to depression, then efficacy-enhancing interventions can be tailored specifically to address efficacy in these areas and protect against development of depression, or ameliorate existing depression. DO is an internal resource, which may be subject to influence through coping skills training. Recent studies aimed at reducing depression and psychological distress in chronic illness have used optimism-training techniques and observed that changes in beliefs and expectations relating to optimism protect against depression (Riskind et al., 1996; Seligman, 1998).

This review has established that self-efficacy for coping with cancer and DO are important determinants of psychological adjustment both directly and through their relationship with coping. Further study is required to investigate their interrelationship with depression in cancer patients.

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3. MAJOR RESEARCH PROJECT PROPOSAL

Depression in Cancer Patients: An Examination of the Role of Self-Efficacy for Coping with Cancer and Dispositional Optimism.

Summary

Considerable evidence exists about the prevalence of affective disorders in patients with cancer. The purpose of this study is to examine the influence of self-efficacy for coping with cancer and dispositional optimism [DO] on depressive symptomotology. Whilst self-efficacy for coping with cancer symptoms has been linked with affective state, there has been little exploration of how self-efficacy for coping with cancer will relate to depressive dysfunction in cancer patients. DO is a recognised predictor of psychological distress in a cancer population, and is also a recognised source of efficacy information, however it's protective role in adjustment is untested in the presence of self-efficacy for coping with cancer.

The study will test the hypothesis that depressive pathology will be related to low levels of self-efficacy and DO, and it will examine the interaction between self-efficacy for coping with cancer and DO. This study will also address the question of whether DO will act as a moderator variable both in efficacy expectations and in depressive symptomotology.

Patients attending the Beatson Oncology service or medical departments of the Western Infirmary will be recruited and complete self-report measures of these variables. t-tests and analyses of variance will examine the relationship between the variables and severity of depression. Obtained data may have implications for determining sources of difficulty in the adjustment process, allowing more tailored interventions, whilst also promoting self-regulation.

Introduction

Depression and cancer

Cancer is associated with a host of negative emotional responses, including anxiety and depression (Taylor and Aspinall, 1990). Considerable evidence exists which suggests that depression is the most common disturbance secondary to cancer (McDaniels et al., 1995). Derogatis et al. (1983) reported that in a sample of 215 randomly selected outpatients with cancer, 13% of those with a DSM III diagnosis (47%) had depression. More recent studies suggest considerable diversity in prevalence rates. Kathol et al. (1990) and Middlebroe et al. (1994) reported major depression rates of 30% and 10% of their samples respectively.

Self- efficacy

Self-efficacy has demonstrable relevance for adjustment in patients' with chronic medical conditions. It has been defined as an individual's judgement of their capabilities to execute given levels of performance and to exercise control over events (Bandura, 1987). It appears that when self-efficacy or outcome expectancy is low people can be vulnerable to depression (Bandura, 1977).

Increased self-efficacy in cancer patients is associated with decreased physical and psychological symptoms (Lev, 1997). Self-efficacy for coping with cancer is a slightly different construct from self-efficacy per se. It relates to expectations about coping with the major tasks that will confront cancer patients, even if the individual has not yet experienced the problem. According to Bandura (1991b), those with high efficacy expectations for coping feel that they are able to call upon reserves to meet the challenges involved in coping with stressors such as cancer. Those who are low in efficacy may feel overwhelmed by the demands of their situation.

Beckham et al. (1997) looked at the relationship between self-efficacy for coping with cancer related symptoms and patient cancer adjustment, depression, psychological distress and behavioural dysfunction in male veteran cancer patients. They found that coping self-efficacy was related to all the adjustment measures, with the exception of depression, where the relationship failed to reach statistical significance.

According to Merluzzi and Martinez Sanchez (1997), who recently developed a comprehensive measure of efficacy for coping with all the major tasks in cancer, efficacy expectations play a major role in coping. This belief is based on Bandura's hypotheses regarding self-efficacy as an integral part of a general self-regulation model, which plays a major role in the self-observations, judgement processes and self-reactions forming the three domains of self-regulation. Merluzzi and Martinez Sanchez found that this measure which taps the major domains of coping is significantly related to variables related to adjustment to cancer. One of these variables was optimism, which the authors believed was a source of efficacy information.

Dispositional Optimism

Dispositional optimism [DO] is a variable that has been associated with depression in both the general population (Puskar et al., 1999; Chang, 1998; Broomberger et al., 1996) and in cancer patients. DO, a stable personality characteristic, has been defined as the tendency to expect positive versus negative life outcomes (Scheier and Carver, 1992). DO plays a protective role in long-term psychological outcomes because it acts as an adaptational mechanism in the face of a wide variety of significant stressors. Optimists report better psychological adjustment to negative life events (Scheier, Weintraub & Carver, 1986) and to serious illnesses including cancer (Carver et al., 1993).

DO also seems to be an important prospective predictor of distress for individuals with life threatening illness (Carver et al, 1994). In their study of women with early stage breast cancer it was suggested that DO may be a predisposing marker for vulnerability to adjustment difficulties. The findings of Curbow et al. (1993) and Miller et al. (1996) reinforce this suggestion. Most recently in a study on psychological processes in breast cancer patients Epping Jordan et al. (1999) reported a direct relationship between DO and anxiety and depressive symptoms both at the time of diagnosis and at 6 months post diagnosis. DO acted as a significant predictor of emotional distress and more optimistic women experienced lower levels of distress. The interpretation of these results is limited by the absence of a control group, therefore it remains to be seen how this personality variable is associated with depression per se amongst cancer patients.

Self-efficacy as a general construct has been associated with depression in the general population and in the cancer population. As yet in the cancer literature, self-efficacy for coping with cancer symptoms has been the only behaviour-specific efficacy expectations to be directly linked to affective state (Beckham et al., 1997). The relationship between particular efficacy beliefs for coping with all the major tasks faced by cancer patients and depressive symptomotology has yet to be studied. Additionally the potential links between self-efficacy for coping with cancer and DO have not yet been studied, either together or directly in relation to depressive symptomotology. Merluzzi and Martinez Sanchez (1994) found that efficacy expectations on all the factors of the Cancer Behaviour Inventory were highly correlated with optimism. Current knowledge on DO posits that it plays a protective role in cancer, in that it acts as a buffer to stress by influencing the types of coping strategies chosen. DO is positively associated with active problem-focused strategies, such as acceptance, positive re-appraisal and seeking social support (Carver et al., 1994). However the role of DO in protecting cancer patients from depression is largely untested if a variable such as self-efficacy for coping with cancer is introduced into the analysis.

It has been increasingly acknowledged that illness representation [IR] is a psychological variable that plays a role in adjustment to chronic illness, however due to the dearth of research on IR in the cancer population, there is no specific knowledge about the relationship of IR to depression. Hence a subsidiary aim of this study will be to describe the IR's of the sample.

The purpose of this study therefore is to examine the relationship of self-efficacy for coping with cancer and dispositional optimism to depression among cancer patients. Additionally the relationship between self-efficacy for coping with cancer and DO will be examined.

Aims

1. To examine the impact of self-efficacy for coping with cancer on depressive symptomotology.
2. To examine the relationship between DO and self-efficacy beliefs for coping with cancer.
3. To examine the relationship between DO and depressive symptomotology.
4. To describe the illness representations of the sample.

Hypotheses

1. It is hypothesised that higher levels of DO will be associated with lower levels of depressive symptomotology.
2. It is hypothesised that low efficacy expectations will be associated with less depressive symptoms in patients with high DO than low DO.
3. It is hypothesised that lower self-efficacy for coping with cancer will be associated with higher levels of depressive symptomotology.

Participants

Participants will be recruited from the Beatson Oncology Centre and other medical departments of the Western Infirmary in Glasgow. Participants will be included if they have a confirmed diagnosis of, breast cancer, colorectal cancer or leukaemia, as these are the most commonly occurring cancers with good prognoses. The sample will be restricted to those recently diagnosed because it has been shown that patients' adjustment to cancer may vary over time (Anderson et al., 1989). In regards to participant's cancer stage, the recruitment strategy will aim to sample equally among those with stage I, II and III cancers. Participant's cancer stage and disease status will be classified according to the nomenclature of the American Joint Committee on Cancer (1992): localised disease refers to stages 1 and 2, regional disease refers to stage 3 and metastatic/systemic disease refers to stage 4. Participants with a diagnosis of leukaemia will be classified according to the French-American classification (FAB). Experimental control will be addressed by matching subjects in the depressed and non-depressed group by age, gender, site of cancer, and stage of disease.

Participants Common Inclusion Criteria for Both Groups

- Aged between 16-65 years.
- Recent diagnosis of cancer (approximately 0-12 weeks)
- All participants diagnosed with stages 1, 2 (localised disease), or 3 (regional disease).
- All participants diagnosed with breast, colorectal cancer or leukaemia.

Participants Common Exclusion Criteria for Both Groups

- Impaired cognitive ability – demonstrating evidence of dementia or acute confusional state. (will be assessed via clinician judgement)

Additional Inclusion Criteria for the Depressed Group

- Those who obtain a score of ≥11 on the Hospital Anxiety and Depression Scale (HADS) depression subscale and an index of ≥50 on the Zung Self-rating Depression Scale (ZSDS) (See Measures Section)

Additional Inclusion Criteria for the Non-depressed Group

- Those who obtain a score which is ≤10 on the HADS depression subscale and <50 on the ZSDS

Measures

The following questionnaires will be used in the study: -

Cancer Behavior Inventory Version 2.0 (CBI-L 2.0: Merluzzi and Martinez Sanchez, 1997) – The CBI is a measure of self-efficacy for coping with cancer. The 33 item long form (CBI-L version 2.0), revised in 1999 was used in the current study. Items are rated on a nine-point Likert Scale from "not at all confident" to "totally confident". The CBI-L has a seven factor structure which accounts for 63% of the variance. Theses factors are Maintenance of Activity and Independence, Seeking and Understanding Medical Information, Stress management, Coping with Treatment Related Side-Effects, Accepting Cancer/Maintaining a Positive Attitude, Affective Regulation and Seeking Support. In validation studies (Merluzzi, Martinez Sanchez and Nairn, 1997) computed internal consistency of the original CBI as $\alpha = .94$ (see appendix 3.1)

Life Orientation Test (LOT; Scheier & Carver 1985; Scheier, Carver & Bridges 1994) – The LOT is a measure of dispositional optimism. The LOT is a 12 item self-report scale. Items are rated on a 5-point Likert Scale from "strongly disagree" to "strongly agree". In validation studies (Scheier et al., 1994) internal consistency was $\alpha = .78$ (see appendix 3.2)

Illness Perception Questionnaire (IPQ; Weinman, Petrie, Moss-Morris & Horne, 1996) – This questionnaire has been developed to assess the cognitive representations of illness. It comprises of five scales providing information on the five dimensions underlying the cognitive representation of illness. These are Identity, Time-Line, Consequences, Control and Cause (see appendix 3.3)

Hospital Anxiety and Depression Scale (HADS; Zigmond & Snaith 1983) – The HADS is a 14 item self-report scale, which was developed specifically for the measurement of depression and anxiety in physically ill populations. The subscale scores of depression and anxiety have been validated in cancer patients (Ravasi et al. 1990; Moorey et al., 1991).

Zung self-rating depression scale (ZSDS) (Zung, 1965) is a 20 item scale involving ratings on a four-point qualitative temporal scale ("a little of the time", "some of the time", "good part of the time", and "most of the time"). Items are scored 1,2,3 and 4 respectively, with higher scores indicating more depression. The Zung rating scale has recently been used successfully as a screening tool for depression in a cancer population. Internal consistency was calculated as $\alpha = 0.84$ (Dugan et al., 1998). Reynolds and Gould (1981) reported a correlation of +0.57 with the BDI.

It is believed that by utilising two measures of depressed symptoms, the accuracy of determining the presence or absence of clinically significant depressive symptoms will be increased.

Sociodemographic factors, including age, gender, marital status, and employment status were elicited via questionnaire. Cancer site and stage of disease and treatment information will be recorded from the participant's medical records.

Endpoints of Study

Primary Endpoint

Dispositional optimism in patients with depression versus no depression

The life Orientation Test (LOT) score will be compared by t-test between the Depressed group and Non-Depressed group. A difference in LOT of 5 points would be considered to be clinically significant. With 16 subjects in each group, the study will have 80% power to detect a difference of 5 points at alpha 0.05.

Secondary Endpoint

Self-efficacy for coping with cancer in patients with depression versus no depression

The Cancer Behaviour Inventory (CBI) score will be compared by t-test between the Depressed Group and Non-Depressed Group. A difference in CBI-L scores of 40 points would be considered to be clinically significant. With 16 subjects in each group, the study will have 80% power to detect a difference of 40 points at alpha = 0.05.

The interaction between dispositional optimism and self-efficacy

The interaction between high and low dispositional optimism (median split in scores on LOT) and high and low self-efficacy ratings (median split in scores on the CBI-L) will be examined on depressive symptoms using ANOVA. With 10 subjects for each combination (high DO/high SE; high DO/low SE; low DO/high SE; low DO/low SE). The study will have 80% power to detect a difference on the HAD depression scale score of 3 (using data from Moorey et al., 1991).

Design and Procedure

A variety of recruitment methods will be employed to secure an appropriate sample of cancer patients with varying degrees of depressive symptomotology. These will include leaflet advertising for people who have developed depressive symptoms since a cancer diagnosis and via referral by the oncologists. Tara Wyne (Trainee Clinical Psychologist) will interview all potential participants, who will be matched according to age, gender, tumour site, and stage of disease to identify if any depressive symptoms are evident and screen for any exclusion criteria.

The nature and procedure of the study will be explained to suitable participants and an information sheet provided (see appendix 3.4). Those patients willing to be involved will be asked to sign a consent form (see appendix 3.5) indicating this and will also have the opportunity to ask questions. The participant will then be asked to complete the HADS, ZSDS, IPQ, CBI-L and the LOT. It is anticipated that completion of the above measures should require no longer than 1 hour. Should any of the scores on the HADS or ZSDS reach "caseness" criterion this will be discussed with the patient and depending on consent, the appropriate consultant will be notified and recommendations made for management.

Settings and Equipment

Facilities at the Department of Psychological Medicine, Gartnavel Royal Hospital will be used in the production of the questionnaires and other administrative materials. Information processing and data analysis facilities such as SSPS will also be available at the Department of Psychological Medicine. It is anticipated that some assistance might be required from staff at the BOC in order to facilitate access to a sample of appropriate patients and to procure a room for interview purposes and gain access to medical records to verify cancer site and stage of disease of participants.

Data Analysis

Data from the questionnaires will be entered anonymously onto a SSPS database in order to be analysed. Descriptive statistics will initially be conducted for the purposes of sample description. Inferential analyses will be paired sample t-tests to analyse the difference in scores on the main measures (chosen for parametric/nonparametric as appropriate). These tests are being employed because it is believed that a two-group design will more powerfully test the hypothesis. Anovas may be used to examine the interaction of high and low self-efficacy and high and low DO and the subsequent effect on severity of depressive symptomotology.

Practical Applications

This study has important implications for determining what factors are determinants of adjustment to cancer, and to pinpoint which elements of self-efficacy and levels of DO are particularly related to specific instances of dysfunction. If we can determine that low levels of efficacy for the major domains of coping are related to symptoms of depression then interventions can be far more specific and tailored to individuals. Another application of this study may be to allow clinicians to intervene in the adjustment process to avoid the development of more enduring problems like depression. Other practical applications include individuals with cancer becoming more aware of their specific self-efficacy appraisals, and how these relate to their progress in practical and psychological terms. Increased awareness of the protective role of DO might also provide them with insight into internal resources which can be used to counteract maladaptive adjustment in the form of depression, therefore allowing them to self-regulate or seek out services sooner.

Ethical Approval

Ethical approval for this study was gained from the West Ethics Committee for the North of Glasgow University Hospital Trust (see appendix 3.6).

AMENDMENTS TO PROPOSAL

The following statement explains the discrepancies between the major research project proposal and the major research project paper.

The inclusion criterion for the participants of the study referring to time since diagnosis was changed from zero to three months to zero to six months. Due to time limitations and recruitment issues this time period was widened. The initial reasoning for restricting it to three months was because it has been established that adjustment to cancer changes over time. However the authors of the CBI (self-efficacy for coping variable) state that time since diagnosis does not affect judgements of self-efficacy. The LOT measuring the second variable of interest is a dispositional resource and would be unaffected by time since diagnosis.

The cancer types to be included in the sample were initially breast, colorectal and leukaemia as they were commonly occurring. However due to time limitations it was decided that a heterogeneous sample inclusive of various cancer types would be acceptable.

The planned statistical analysis was altered following consultation with Dr James Currall (medical statistician). There were unequal cell sizes in the ANOVA, which examined the interaction between high and low DO, and high and low self-efficacy ratings on depressive symptoms, therefore indicating cautious interpretation of any results. Examination of the full range of scores on the continuous variables of self-efficacy for coping and DO and their relationship to depression was carried out using a multiple regression analysis to permit further clarification of the relationship between these variables and permit important comparisons to be made with prior studies.

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4. MAJOR RESEARCH PROJECT PAPER

Depression in Cancer Patients: An Examination of the Role of Self-Efficacy for Coping with Cancer and Dispositional Optimism.

Written in accordance with the guidelines for submission to: Psycho-Oncology

(Appendix 2.1)

ABSTRACT

The relationship between self-efficacy for coping with cancer, dispositional optimism [DO] and depression was studied in 37 cancer patients recruited from a specialist cancer centre and from a haematology ward in a local general hospital. Participants completed the Cancer Behavior Inventory (CBI), Life Orientation Test (LOT), Illness Perception Questionnaire (IPQ), the Hospital Anxiety and Depression scale (HADS) and the Zung Depression Rating Scale (ZSDS). Consistent with the hypotheses, DO and self-efficacy for coping with cancer were lower in the depressed group. Correlational analyses indicated that depression was positively associated with all the domains of coping on the CBI. A median split on CBI and LOT scores allowed analysis of the interaction between high and low DO and self-efficacy for coping on depressive symptoms. A main effect for self-efficacy for coping was noted. Regression analyses revealed that self-efficacy for coping accounted for 48% of the variance in total depression scores on the HAD. The results of the analyses suggested that contrary to expectation, DO did not compensate for low self-efficacy and protect against depression. Self-efficacy for coping assumed this protective role irrespective of the level of DO. There may have been conceptual overlap between the two constructs and situation specific outcome expectancies may have influenced responses on the DO measure that could have confounded DO's relationship to depression. Findings are discussed within the context of the current literature and implications for future research are proposed.

INTRODUCTION

Cancer and Depression

Cancer is now the second leading cause of death in the UK (DoH, 2000). Lung, large bowel, breast and prostate cancer account for half of all new cases and are responsible for over half of all cancer mortality. Patients with cancer experience considerable stress, which can have prolonged psychological consequences. Research has hypothesised that cancer, like other serious and often chronic illnesses, is associated with a wide range of responses, of which depression is the most common (Mermelstein and Lesko, 1992; McDaniels et al., 1995). Derogatis et al. (1983) found a prevalence of adjustment disorder with depressed or mixed emotional features to be 25% and a prevalence of major depression to be 6%. More recent studies suggest considerable diversity in prevalence rates. Ibbotson et al. (1996) controlled for disease and treatment factors and using a diagnostic clinical interview found 17% of the sample had a major depressive illness. Chocinov et al. (1994) found a combined prevalence rate for minor and major depression of 26% using Research Diagnostic Criteria and Endicott criteria.

The wide variation in these studies reflects different settings, disease sites and stages, and the use of different research instruments, cut off scores and diagnostic criterion. Despite evidence of high levels of depression in cancer patients, under diagnosis and under treatment of depression continues to be common. Bottomley (1998) estimated that 20-25% of cancer patients are in this position. One explanation may be the common and misguided assumption that depression is a normal and inevitable reaction to life threatening illness (Taylor and Aspinwall, 1990).

Psychological Factors

Given the prevalence of depression among individuals with cancer, it is important to identify potentially modifiable contributing psychological factors. Three of these factors may be self-efficacy for coping with cancer, dispositional optimism [DO] and illness representation [IR].

Self- Efficacy

Self-efficacy has a major impact on adjustment to chronic illness (Beckham et al., 1987, 1994, 1995). Bandura (1982, 1994) defined perceived self-efficacy as people's beliefs about their capabilities to produce designated levels of performance to exercise influence over events that affect their lives. Self-efficacy influences adjustment because it mediates the relationship between health-related stressors and outcome variables (Beck and Lund, 1981). Beckham et al. (1994) reported that self-efficacy was a consistent predictor of adaptational reactions in Rheumatoid Arthritis and that patients with higher self-efficacy were less affected by depression. Parle and Maguire (1995, 1996) highlighted the role of appraisal in secondary outcomes in cancer in their study on maladaptive coping and affective disorders. They defined primary and secondary appraisals respectively as the degree of threat posed by the demand and the perception of ability to manage the threat posed by the demand. They reported that the degree of threat appraised and reports of a helpless response predicted affective disorder. They posited that the helpless coping response was probably more appropriately understood as negative secondary appraisals (negative perception of ability to manage demands). Therefore indicating that a construct similar to self-efficacy was a predictor variable in affective disorder through its relationship to coping.

Self-efficacy for coping with cancer is a slightly different construct from self-efficacy per se. It recognises that cancer does not represent a unitary variable and includes a broad range of demands (Dunkel Schetter et al., 1992). It relates to expectations about the ability to mount coping resources to meet the demands of the major tasks that will confront cancer patients. These expectations are formed via assessment of internal and external resources, which are then processed, and choice behaviour and effort regulated accordingly. Those patients who perceive themselves as capable of meeting the demands associated with cancer and it's treatment will be able to mount resources to meet the many challenges they face (Grassi et al., 1993; Merluzzi and Martinez Sanchez, 1997). Lower ratings of perceived difficulty of coping behaviours by cancer patients were associated with more positive adaptation to cancer than their counterparts who held more realistic perspectives (Merluzzi and Martinez Sanchez, 1997).

Beckham et al. (1997) examined the relationship between self-efficacy for coping with cancer-related symptoms such as pain and function, and patient cancer adjustment, depression, psychological distress and behavioural dysfunction. Self-efficacy for coping was related to all the adjustment measures, with the exception of depression. However this study was limited because it only looked at self-efficacy for coping with cancer related symptoms and not efficacy expectations across other domains of coping. If all the domains of coping were appraised, the demands evaluated might increase substantially and a different relationship to depression may indeed be established.

Therefore the extent to which self-efficacy expectations for coping with the demands of cancer and depression are related has yet to be investigated. If specific domains of coping were highlighted as problematic, efficacy enhancing interventions using coping skills training could be tailored and prevent depression.

Dispositional Optimism [DO]

DO has been defined as the tendency to expect positive versus negative life outcomes (Scheier and Carver, 1992). These generalised positive outcome expectancies play a protective role in long-term psychological outcomes because they act as an adaptational mechanism in the face of a wide variety of significant stressors (Scheier and Carver, 1995). Optimists are more likely to conclude impediments can be overcome. These beliefs and continued efforts to which they give rise cause optimists to continue striving and deal with problems more successfully than pessimists.

DO has a demonstrable impact on cancer patients emotional functioning. Pozo et al. (1990) reported that optimism predicted distress over time in a prospective study of psychological adaptation of women to surgery for early stage breast cancer.

A number of studies have investigated which processes mediate emotional distress in breast cancer patients (Carver et al., 1993; Miller et al., 1996; Bjork et al., 1999; Epping-Jordan et al., 1999). Carver et al. (1993) found that differences in coping such as use of acceptance, denial and behavioural disengagement served as a mediating mechanism by which differences in optimism influence subjective wellbeing in women with early stage breast cancer. Epping Jordan et al.'s (1999) study investigated whether background dispositional factors including DO, specifically predict anxiety and depression in women with newly diagnosed breast cancer. They reported that DO had a direct relationship to anxiety and depression symptoms at diagnosis and six months follow up. High DO also predicted the proximal variable of greater emotion-focused disengagement coping, which in turn predicted higher anxiety and depression symptoms.

Therefore, there is evidence that DO protects individuals from the negative effects of cancer, and that low optimism is involved in poor psychological adjustment such as depression.

Illness Representations [IR]

Patient's cognitive representations of illness and coping behaviours are viewed as particularly important determinants of adaptive coping outcome in chronic illness (Meyer et al., 1985; Petrie and Weinman, 1997). Upon symptom appearance, diagnosis or during the illness experience, individuals' construct a representation of their health threat, which then influences their behaviour. Leventhal and Nerenz (1983) identified five dimensions of this IR in terms of which most people think of their disease. These are identity, cause, consequences, time line and curability.

Research to date has disregarded the possibility that IR's act as predictors of psychological adjustment to cancer. Buick (1997) examined IR of breast cancer patients coping with radiotherapy and chemotherapy. Buick reported that negative illness beliefs were associated with maladaptive psychological responses. Schema composed of more moderate and positive illness perceptions promoted psychological adjustment far more than those composed of the negative dimensions of cancer did.

No data are available on the association of IR and depression among cancer patients. Moss-Morris et al. (1996) studied variables relevant to depression in chronic fatigue syndrome.

Depressed CFS patients had the most pessimistic illness beliefs and internal, uncontrollable attributions.

Conclusions

Evidence indicates that DO, self-efficacy for coping and IR are relevant constructs to be investigated in relation to depression and psychological adjustment in cancer patients. To date no studies have been located that examine either the relationships between self-efficacy for coping and depression and IR and depression or the interrelationships between these variables in individuals with cancer.

The importance of studying DO's relationship to depression in cancer patients alongside self-efficacy for coping is due to the fact that DO's protective role in psychological adjustment in cancer both directly and via coping strategies may be intrinsically changed if self-efficacy expectations for coping are low. Judgements of little or no ability to mount coping resources to meet the demands of cancer could influence the initiation and use of the coping strategies, which mediate DO's protective role and make individuals less likely to conclude that impediments can be overcome. The converse position wherein patients have high self-efficacy for coping with the demands of cancer, but low DO is also intriguing. Despite judgements supporting the ability to cope, if there is no generalised expectancy for positive outcomes as proposed by Scheier and Carver (1995) patients may not continue to strive to deal with problems related to cancer and initiate active and complex coping strategies.

Therefore the aims of this study are to examine the relationship of self-efficacy for coping with cancer and DO and IR among cancer patients. Additionally the relationship between cancer self-efficacy and DO will be examined. It is hypothesised that higher levels of optimism and self-efficacy for coping respectively will be associated with lower levels of depressive symptomatology. It is also hypothesised that low efficacy expectations will be associated with less depressive symptoms in patients' with high DO than low DO.

METHOD

Design

This study utilised a cross sectional between groups design.

Participants

Forty-seven patients with a variety of cancer diagnoses were recruited and 44 patients screened at a specialist cancer centre and two district general hospitals in the West of Scotland. The main method of recruitment for out-patients was through posters and leaflet advertising for people who had developed symptoms of low mood since their cancer diagnosis. Patients who were interested in participating completed tear-off slips, which were collected on a weekly basis from various centres. A variety of key personnel involved in routine care at the cancer centre were also involved in identifying suitable participants for this study, including medical and clinical oncologists, radiographers and clinical nurse specialists. There were a number of inclusion and exclusion criteria for both groups:

Participants Common Inclusion Criteria for Both Groups

- Aged between 16-65 years.

- Recent diagnosis of cancer (approximately 0-6 months)

- All participants diagnosed with stages 1, 2, (localised disease) or 3 (regional disease).

- All participants diagnosed with cancer (Breast, Colorectal, other or leukaemia).

Participants Common Exclusion Criteria for Both Groups

- Impaired cognitive ability – demonstrating evidence of dementia or acute confusional state. (was assessed via clinician judgement)

Additional Inclusion Criteria for the Depressed Group

- Those who obtained a score of ≥11 on the Hospital Anxiety and Depression Scale (HADS) depression subscale and an index of ≥50 on the Zung Self-rating Depression Scale (ZSDS) (See Measures Section)

Additional Inclusion Criteria for the Non-depressed Group

- Those who obtained a score which is ≤10 on the HADS depression subscale and <50 on the ZSDS

There was no comparable study on the basis of which to compute a power calculation. However there are data on the samples used to develop version one of the Cancer Behavior Inventory (Merluzzi and Martinez-Sanchez, 1997). The helplessness/hopelessness scale of the Mental Adjustment to Cancer Scale (Watson et al., 1988) has been used as a proxy measure of depression. Using these data (see appendix 4.1), which was obtained via personal communication with the principal author of the CBI, a minimum of 16 participants per group will be required to detect significant differences ($P<0.05$) on a paired sample t-test with 0.8

power (one-tailed). Therefore 32 participants will need to be recruited for this study.

Procedure

Once identified, potential participants were contacted by telephone or seen on a ward to ascertain if they met inclusion criteria for the study and to arrange an appointment to explain the study and complete the research materials. Those individuals who met the inclusion and exclusion criteria, agreed to participate in the study and signed the informed consent form were administered the self-report battery (See Measures Section). Demographic, illness and treatment information was also elicited. Individuals who had difficulty completing the forms due to physical disability or treatment factors e.g. leukaemia patients on constant IV medication (n=3) were read each item by the principal investigator, who also recorded their responses. The entire procedure took no longer than one hour. The SPSS for Windows statistical package, version 9.0 was used to analyse data.

Measures

Self-efficacy for coping with cancer. The Cancer Behavior Inventory Version 2.0 (CBI-L 2.0: Merluzzi & Martinez Sanchez, 1997; Merluzzi & Martinez Sanchez, 2001) - was used to measure self-efficacy for coping with cancer. The 33 item long form (CBI-L version 2.0) was revised in 1999. Sample items are as follows: 1. Coping with hair loss 2. Expressing negative feelings about cancer 3. Asking physicians questions. Items are rated on a nine-point Likert Scale from "not at all confident" to "totally confident". A total efficacy score is obtained by adding the scale value of each of the items. The scoring ranges between zero and 297. The CBI-L has a seven-factor structure. These factors are Maintenance of Activity and Independence, Seeking and Understanding Medical Information, Stress management, Coping with Treatment Related Side-Effects, Accepting Cancer/Maintaining a Positive Attitude, Affective Regulation and Seeking Support. The α for the CBI was 0.94, the test-retest (1 week) reliability coefficient was 0.74.

Optimism. The Life Orientation Test (LOT; Scheier & Carver 1985; Scheier, Carver & Bridges 1994) was used to measure dispositional optimism. The LOT is an eight item self-report scale (plus four filler items – to disguise the underlying purpose of the test) that yields a continuous distribution of scores from zero-48. A sample item: "In uncertain times, I usually expect the best." Each item is scored on a five-point Likert Scale from "strongly disagree" to "strongly agree". In validation studies (Scheier et al., 1994) internal consistency was α = .78. The test re-test reliability coefficient was 0.79 over a four-week interval and 0.72 over a 13-week interval, suggesting that the LOT possesses reasonable stability across time.

Illness Representations. The Revised Illness Perception Questionnaire (IPQ-R; Weinman, Petrie, Moss-Morris & Horne, 1996; Weinman et al., 2001) was used to record illness representations. This questionnaire has been developed to assess the cognitive representations of illness. It comprises nine subscales providing information on five dimensions underlying the cognitive representation of illness. A sample item is as follows: " my illness is easy to live with". The items are rated on a 5-point likert scale from "strongly disagree" to "Strongly agree". There are 12 items in the identity subscale, which enquires about the symptoms experienced. Yes/No responses are required. The remaining subscales contain 50 items, and the Causes subscale has 18 items. The subscales and their internal reliability and 6 month retest reliability are as follows: Identity (α = .78/ .57), Time-Line (Acute /Chronic α = .89/. 55 and cyclical α = .79/. 35), Consequences (α = .84/. 74, Control

(Treatment $\alpha = .80/.50$ and Personal$\alpha = .81/.57$), Illness coherence ($\alpha = .87/.53$), Emotional Representation ($\alpha = .88/.81$).

Depressive symptomatology.

Hospital Anxiety and Depression Scale (HADS; Zigmond & Snaith, 1983) – The HADS is a 14 item self-report scale, which was developed specifically for the measurement of depression and anxiety in physically ill populations. The depression and anxiety subscales each contain seven items. Scores range from 0-21 on each subscale, with questions individually rated on a four-point scale. A sample item is as follows: "I still enjoy the things I used to enjoy". Internal consistency of the depression items ranged between +.30 and +.60, significant at $p<0.02$. Ravasi et al.'s (1990) validation study of the HADS in a cancer population included convergent validity between the HADS and the Montgomery & Ashberg Depression Rating Scale (MADRS; Montgomery and Ashberg, 1979). The correlations between the depression scores of HADS and the MADRS were at least 0.70.

The Zung Self-rating Depression Scale (ZSDS) (Zung, 1965) is a 20 item scale involving ratings on a four-point qualitative temporal scale ("a little of the time", "some of the time", "good part of the time", and "most of the time"). Items are scored 1,2,3 and 4 respectively, with higher scores indicating more depression. The Zung rating scale has recently been used successfully as a screening tool for depression in a cancer population. Internal consistency was calculated as $\alpha = 0.84$ (Dugan et al., 1998). Reynolds and Gould (1981) reported a correlation of +0.57 with the Beck Depression Inventory.

Two measures of depressive symptomatology were administered. The principle reason for employing two measures was because the HADS depression subscale is limited by being largely based on the anhedonic state. Despite inclusion of somatic items, The ZSDS contains items which are representative of other psychopathological features of depression. It was anticipated that a composite score might overcome the limitations of either scale and increase the likelihood of identifying participants with depressive symptomatology. Agrell and Dehlin (1989) evaluated stroke patients with the ZSDS and other measures of depression (the Centre for Epidemiologic Studies Depression Scale (CES-D) and the Hamilton Depression rating Scale (HDRS)). The authors concluded that the sensitivity and predictive value was most accurate with a composite of the ZSDS and the CES-D. Therefore providing a precedent for using a composite of two depression measures in a physically ill population. The term "depression" in the present study refers to depressive symptomatology and does not signify a diagnosis of depressive disorder.

Functional Status. The Karnofsky Performance Status Scale (KPS; Karnofsky and Burchenal, 1949) is a rating scale commonly used by oncologists to quantify the extent of impairment in functional status. Although the KPS is in widespread use with cancer patients, its psychometric properties have not been established (Donovan et al., 1989). The KPS was included in this study because it is the most frequently used instrument to assess functional status in cancer patients and the current investigation wanted to ensure that there was no systematic variation in functional status between groups. A low KPS score indicates a high level of physical disability.

RESULTS

In order to optimally describe the interrelationships between self-efficacy for coping, DO and depression, results are presented in stages. Descriptive statistics were used to describe the sample characteristics. Independent t-tests were used for interval data and Mann Whitney-U tests to compare groups, which did not meet the assumptions necessary to perform parametric analysis. Pearsons and Spearmans rho correlations were used to determine relationships between data. ANOVA examined potential relationships between self-efficacy for coping, DO and depression and regression analyses highlighted predictive relationships among the psychological variables and depression.

Patient characteristics

Forty-seven patients were recruited to the study. Three patients refused to participate due to exacerbated physical illness (refusal rate = 1.4%). Of those who declined to participate, two were female and one male. Both females had diagnoses of breast cancer and the male had a diagnosis of prostate cancer. All three had been diagnosed within the past six months. Seven patients were screened out, as they did not meet the inclusion criteria for length of time since diagnosis (3.3%). The seven patients who were screened out comprised of five females and two males. Their mean age (± SD) was 51.2 ± 6.3 years. The proportion who were married was 71.4% (n=5), 57.1 % (n=4) were employed and 42.6% (n=3) had been in further education. All five females were diagnosed with breast cancer and the two males had diagnoses of colorectal cancer. Using the nomenclature of the American Joint Committee on Cancer (1992) to classify participants' cancer stage: Four patients (57.1%) had localised disease (stage 1 and 2) and two patients (28.5%) had regional disease (stage 3) and one patient (14.3%) had metastatic disease (stage 4). All the patients who were screened out had undergone surgery and received adjuvant treatment.

Of the remaining 37 participants who were included in the final sample, eight were male and 29 were female. Mean age of participants was 53.8 ± 8.3 years. The majority of participants was married (78.4%), employed (62.2%), and 48.6% percent had been in further education.

The most common cancer types included breast (n=23), leukaemia (n=5) as well as a variety of other diagnoses (n=9). The majority of participants' cancer stage was classified using the nomenclature of the American Joint Committee on Cancer (1992): 21(56.8%) participants had localised disease (stages 1 and 2), seven (18.9%) had regional disease (stage 3) and four (10.8%) participants had metastatic disease (stage 4). The remainder of participants had a diagnosis of Leukaemia. These five participants were diagnosed with Acute Myeloblastic Leukaemia (AML). According to the French-American classiification (FAB): three participants had undifferentiated myeloblastic leukaemia (MO), and two participants had myeloblastic leukaemia with maturation (M3). The mean length of time from diagnosis to participation was 4.1 ±1.3 months. Most patients had undergone surgery at the time of the diagnosis (n=29, 78.4%). All participants had received adjuvant treatment (23 chemotherapy, 23 radiotherapy and 10 radiotherapy and chemotherapy). All were receiving treatment when they participated. Six participants (16.2%) had a previous diagnosis of cancer and 14 (37.8%) had a history of depression.

Visual inspection of the descriptive statistics indicated that there was no systematic variation between those patients who refused to participate and were screened out and the participants in the final sample in terms of demographic, illness and treatment characteristics. A comparison of demographic, illness and treatment characteristics of participants in the depressed and non-depressed groups demonstrated that both groups were comparable in age, gender, time since diagnosis, type of medical therapy, stage of disease and scores on the KPS scale (see Table 1). Use of chi-square tests of independence for the categorical variables and t-tests for the interval variables demonstrated that there were no significant differences between the depressed and non-depressed groups on the aforementioned variables (see Table 1).

INSERT TABLE 1 HERE

DO and Depression

It was hypothesised that higher levels of DO would be associated with lower levels of depressive symptomatology. This was examined using independent sample t-tests, which indicated that there was a significant difference between the depressed and non-depressed group in DO (t = 4.23, df = 35, p= .000). The depressed group having significantly lower dispositional optimism (mean score on LOT = 15.19 ± 5.0) than in the non-depressed group (mean score on LOT = 22.62 ± 5.5). This confirmed hypothesis one, which predicted that higher DO would be associated with lower depressive symptomatology.

Self-efficacy for coping and Depression

It was hypothesised that lower self-efficacy for coping beliefs would be associated with higher levels of depressed symptomatology. This was examined using a Mann Whitney U test, which indicated that there was a significant difference between the depressed and non-depressed group in self-efficacy for coping (U = 36.00, N1 =21, N2 = 16, p < .001, one tailed). The depressed group having significantly lower self-efficacy for coping (mean score on CBI = 154.88±43.9) than the non-depressed group (mean score on CBI = 223.05±29.6). This confirmed hypothesis two, which predicted that a lower level of self-efficacy for coping would be associated with higher depressive symptomatology.

A series of correlations was carried out to examine the relationship between depression and the factors of self-efficacy for coping. Due to the number of correlations, the Bonferroni adjustment procedure was used and p<0.007 (i.e.0.05/7) was considered significant because the correlations were calculated for depression and seven coping self-efficacy factors.

Significant negative correlations were found between depression and these factors. The highest correlation was between depression and self-efficacy for accepting cancer/maintaining a positive attitude (see Table 2).

INSERT TABLE 2 HERE

Illness representations and Depression

An independent samples t-test indicated that there were no significant differences between the depressed and non-depressed group in IR (t = -. 055, df = 35, p =. 956).

A series of correlations was carried out to examine the relationship between depression and the dimensions of illness representation. Given the number of correlations, a more stringent significance criterion indicated by the Bonferroni adjustment procedure was used and $p<0.006$ (i.e.0.05/8) was considered significant because the correlations were calculated for depression and eight dimensions of IR. There were no significant associations between depression scores and dimensions of IR (see Table 3).

INSERT TABLE 3 HERE

DO and Self-efficacy for coping

A series of correlations was carried out to examine the relationship between DO and the factors of self-efficacy for coping. Given the number of correlations, the significance criterion indicated by the Bonferroni adjustment procedure was used and $p<0.007$ (i.e.0.05/7) was considered significant because the correlations were calculated for DO and seven coping self-efficacy factors. Significant positive correlations were observed between DO and these factors (see Table 4).

INSERT TABLE 4 HERE

Two measures of depression were employed. There was a significant positive correlation of 0.87, ($p<0.001$) between the scores on the HADS and ZSDS.

ANOVA

It was hypothesised that low coping efficacy expectations would be associated with less depressive symptoms in patients with high DO than low DO. The interaction between high and low dispositional optimism and high and low self-efficacy ratings was examined on depressive symptoms using a 2x2 between subjects ANOVA. Participants were split into high and low self-efficacy for coping groups at the median CBI score and high and low DO groups at the median LOT score. The number of participants in the four configurations of dichotomised self-efficacy for coping and DO i.e. cell sizes in the ANOVA were unequal and can be found in Table 5. There was a significant main effect of self-efficacy for coping ($F(1,33) = 8.29$, $p=0.007$). The main effect of DO was not significant ($F(1,33) = 2.211$, $p= 0.147$). There was no significant interaction between self-efficacy for coping and DO ($F(1,33) = 1.598$, $p= 0.215$). This result does not support the hypothesis that low coping efficacy expectations would be associated with less depressive symptoms in patients with high DO than low DO. The main effect for self-efficacy for coping indicates that there is a significant difference in mean depression scores between the people in the high self-efficacy for coping group and the low self-efficacy for coping group. The lack of main effect for DO and the lack of any interaction between self-efficacy for coping and DO indicate that the mean depression scores for those with low and high DO are not significantly different and that self-efficacy for coping and DO did not have a combined effect on depression scores.

High DO did not buffer against depression irrespective of level of self-efficacy for coping as predicted by the hypothesis.

INSERT TABLE 5 HERE

To evaluate the relationship between the full range of scores on the continuous variables of self-efficacy for coping and DO and depression, a hierarchical model of regression analysis was used with the total depression score on the HADS as dependent variable. The hierarchical model enters each independent variable in a series of separate steps based on a predetermined order. This procedure facilitates assessment of the significance of R for each variable. In the regression analysis, there were two predictor variables: self-efficacy for coping and DO. Examination of the beta values indicated that self-efficacy for coping made the biggest contribution towards predicting depression. DO did not significantly add to the variance explained in depression scores when self-efficacy was in the equation. The self-efficacy for coping factor alone accounts for between 47% and 48% of the variance, when DO is added to the coping self-efficacy as a predictor, the variance in depression scores accounted by these two factors together increases only by a few percent to between 50 and 53% and DO retains no significance as a predictor. Therefore only self-efficacy for coping was retained (see Table 6). This result establishes that when the full range of scores on the continuous variables of self-efficacy for coping and DO are considered, self-efficacy for coping accounts for a significant proportion of the variance in depressed scores. This result does not support hypothesis three.

INSERT TABLE 6 HERE

DISCUSSION

In accordance with the hypotheses, independent t and Mann Whitney U tests demonstrated that self-efficacy for coping and DO were significantly lower in the depressed group. Examination of the descriptive statistics and use of independent t and Chi-square tests established that demographic, illness and treatment factors were not variables that differentiated the depressed and non-depressed groups. Therefore addressing the possibility that factors such as older age, more functional disability, more advanced stages of cancer or previous history of depression might be more prevalent in the depressed group and responsible for creating more depressed symptoms.

Statistically significant negative correlations between depression and the factors of self-efficacy for coping indicated that depression increases as self-efficacy for coping decreases. This result goes beyond Beckham et al.'s (1997) findings where self-efficacy for coping with cancer related symptoms was only significantly related to negative affect. The current study provides evidence that self-efficacy in other domains of coping such as maintenance of activity and independence, seeking and understanding medical information, stress management, accepting cancer, affective regulation and seeking support also have a statistically significant relationship with depressed symptoms in cancer patients.

The final hypothesis of the study which predicted that low efficacy expectations would be associated with less depressive symptoms in patients with high DO than low DO was tested using a two-way between subjects ANOVA. This hypothesis was not supported as only a significant main effect for self-efficacy for coping was obtained. No main effect for DO or any interaction between low and high self-efficacy for coping and low and high DO was observed. It was expected that a high level of DO would buffer against depressive symptoms even if self-efficacy for coping was low because it acts as an adaptive mechanism to stressors by promoting the belief that impediments can be overcome (Scheier and Carver, 1995), however, low self-efficacy for coping was associated with higher depression scores both when DO was low and high. The ANOVA highlighted that self-efficacy for coping is more influential than DO in depression scores and that a high level of DO did not compensate for low self-efficacy for coping. One potentially confounding factor in relation to the ANOVA result was that there were unequal cell sizes (see Table 4), which could suggest that self-efficacy for coping and DO were not entirely independent, making it difficult to ascertain what was actually influencing depression scores.

Examination of the influence of the full range of scores of the continuous variables of self-efficacy for coping and DO on depression using a regression analysis permitted comparisons with previous studies which investigated how a domain of self-efficacy for coping relates to depression (Beckham et al., 1997), and DO's relationship to depression (Carver et al., 1993; Miller et al., 1996; Epping-Jordan et al., 1999). The result of this analysis re-iterated the findings on the ANOVA. Self-efficacy for coping accounted for 47-48% of the variance in depression scores independently and the addition of DO did not explain any further variance in the depression scores.

Examination of self-efficacy for coping and DO's respective relationships to depression may help to explain why self-efficacy for coping both as a variable with low and high levels and in its actual amounts was more influential in depression than DO. Previous studies have established that DO's protective role in psychological adjustment in cancer operates through a direct relationship to distress and depression and via coping strategies (Scheier and Carver, 1985; 1993). When self-efficacy for coping is low, there are judgements of little or no ability to mount coping resources (Merluzzi and Martinez-Sanchez, 1997) which influence the initiation of coping strategies which will in turn influence depression directly and could possibly change DO's protective role, thereby further increasing vulnerability to depression. DO motivates people to problem solve and initiate coping strategies. However in the context of a judgement that there is little that can be done to meet demand the individual may conclude they cannot overcome the impediment and desist from coping attempts. Situationally-defined self-efficacy for coping may have proven to be more pertinent in determining coping activity than the trait variable DO, and hence varied more closely with depression.

Another proposition that may explain self-efficacy for coping's apparently exclusive role in depression suggests that the construct of self-efficacy for coping overlaps conceptually with DO. There is evidence that one source of cancer patients' self-efficacy for coping expectations may be their 'positive illusions' or schemas of themselves and the disease. These illusions are distortions that enhance positive self-evaluations, maintain perceptions of control, and promote an optimistic perspective (Taylor and Brown, 1988). In Merluzzi and Martinez Sanchez's (1997) study of cancer patients' perceptions of coping behaviours, they found that patients with high self-efficacy for coping reported schemas that fostered positive illusions. These illusions related to self-enhancing perceptions of personal qualities, exaggerated belief in personal control, beliefs that they could accomplish tasks and had the means to do so. Engaging in this perspective was associated with more positive coping expectations and adaptation to cancer. If situationally-driven optimistic schemas are a source of self-efficacy for coping expectations in cancer patients, it may explain why this variable had such a dominant relationship with depression in the current study. The role of these optimistic schemas in the self-efficacy for coping dimension could have confounded the role of trait DO in the analysis, leading to the current result, whereby DO did not compensate for low self-efficacy for coping nor have any unique predictive value in depression.

The relationship established between self-efficacy for coping and depression in the current study furthers Beckham et al.'s findings (1997). They found no relationship between self-efficacy for cancer-related symptoms and depression. It is possible that self-efficacy for coping accounted for a significant proportion of the variance in depression in the current study because efficacy judgements across more domains of coping were considered. Therefore when an increased number of coping areas and therefore cancer-related tasks were considered in this study compared to Beckham et al.'s study a stronger relationship with depression was established. This suggests that perception of ability to manage demands is indeed a relevant variable in depression when a comprehensive and realistic set of demands is considered.

The role of self-efficacy for coping in depression established in this study concurs with Lightsey's (1997) findings regarding the role of generalised self-efficacy as a stress buffer in negative life events. Social cognitive theory explains why self-efficacy buffers stress, it suggests that people who believe in their ability to cope with particular stressors exhibit greater actual coping ability when the situation requires it, compared to those who do not believe they have the requisite ability (Bandura, 1982). These people develop more realistic goals, persist longer at goal attainment and modify their goals less often than individuals with low efficacy (Bandura, 1997). O'Leary et al. (1988) and Beckham et al. (1994) posit that self-efficacy for coping may also protect against depression in chronic illness because it motivates individuals to pursue adaptive activity despite physical limitations. The relationship between self-efficacy for coping and depression established in the current study parallels the results reported by Parle and Maguire (1995,1996). They reported that the coping process variable of appraisal was predictive of affective disorder in cancer patients. Their definition of primary and secondary appraisals concur closely with the definition of coping self-efficacy, and they reported that helpless responses which are better understood as negative secondary appraisals (perception of ability to manage demand) were also predictive of depression.

The relationship established between self-efficacy for coping and depression could also indicate that depressed symptoms negatively affected participants' views of their ability to cope with cancer-related demands and that low coping efficacy was simply a facet of being depressed. However the converse position where judgements of inability to meet the demands of cancer caused vulnerability to depression is equally tenable. This study employed a cross-sectional design, which did not allow for the direction of the relationship between self-efficacy for coping for cancer and depressed symptoms to be explored.

Optimism

As predicted, level of DO was significantly lower in the depressed group. This result broadly supports previous findings which have established that optimism is reliably related to psychological distress and depression in cancer patients (Carver et al., 1993; Miller et al., 1996; Epping-Jordan et al., 1999). However in the current study, DO did not account for any unique variance in depression, whereas both Miller et al. and Epping-Jordan et al. reported that DO was predictive of depression both directly and mediated via coping strategies, i.e.

DO predicted greater emotion-focused disengagement coping, which in turn predicted higher depressed symptoms. Therefore this result is inconsistent with prior research and bears comment. This inconsistent result maybe attributable to sample differences. For example the current sample was considerably smaller than those in most optimism studies. Alternatively, instrument differences maybe responsible. The current study, unlike most previous studies of optimism, utilised a combined HADS depression subscale and ZSDS score as a discrete outcome measure. Most optimism studies use alternative measures of general mood. Carver et al. 1993 assessed distress using the Profile of Mood States (POMS; McNair, Lorr and Droppelman, 1971). Emotional distress scores are often reported which are composites of anxiety and depression symptoms (Epping-Jordan et al., 1999) rather than measures of depression per se. Therefore the current study has improved upon previous practice of measurement of depression in optimism studies by utilising measures that are known to reliably measure depression.

DO's stability as a dispositional resource in the context of the current stressor of cancer may be a pertinent factor in the relationship established with depression in the current study. Scheier and Carver, (1985) suggest that DO is a general and stable dispositional resource which does not change across life, one which will influence how we respond trans-situationally. However, debate exists about the nature of optimism and indeed, what the LOT is actually measuring. Situational optimism refers to positive outcome expectancies for specific situations. These expectancies are more proximal to stressful events than dispositional beliefs, and therefore could prove to be important predictors of psychological responses to specific stressors like cancer. The situation specific expectancies that may have been influential on responses on the LOT would probably be strongly informed by situation-specific variables such as self-efficacy for coping. Indeed the current study found strong associations between DO and self-efficacy for coping, and this may explain why DO does not account for any added variance in the depression scores.

A recent comparison of the LOT with another optimism questionnaire, the Optimism Pessimism Scale (OPS) indicated that the two were not measuring similar constructs and that the LOT was measuring trait optimism, whilst the OPS was tapping state optimism (Burke et al., 2000). Taylor et al. (1992) also found that trait and state measures of DO were only modestly correlated ($r=.18$) and that the two types of measure predicted different patterns of psychological outcomes.

There has been criticism of the LOT in regards to whether it can reliably predict unique variance, and of the construct of DO itself. Smith et al. (1989) highlight the third variable problem and suggest that the LOT is difficult to distinguish from measures of neuroticism and that studies using the LOT may be more parsimoniously interpreted as reflecting neuroticism rather than DO. Similarly, in studies on self-mastery and DO in women professionals and of self-esteem as predictors of post-partum depression DO, was unable to predict various outcomes following statistical control of the variance associated with related predictors (Marshall and Lang, 1990; Fontaine and Jones, 1997). It has already been suggested that there may be conceptual overlap between self-efficacy for coping and DO. During their validation studies on this measure of self-efficacy for coping in cancer the authors of the CBI also reported that that it was highly associated with DO on the LOT (Merluzzi and Martinez Sanchez, 1997). This may explain the lack of unique variance in depression accounted for by DO. Scheier at al. (1994) re-evaluated the LOT and found that associations between depression and DO remained significant following statistical control of trait anxiety, self-mastery and coping. However there has been no previous evaluation of the predictive and discriminant validity of DO alongside the variable of self-efficacy for coping.

The main findings of the study regarding self-efficacy for coping, DO and depression have been discussed in the context of cancer, however the relationships established between self–efficacy, DO and depression are not specific to cancer or people with physical illness. These variables have been shown to interact similarly in the general population. According to Bandura's (1982, 1986) reformulation of the relationship between self-efficacy and depression, when individuals believe that highly desired outcomes are obtainable through the performance of certain behaviours, and believe they are incapable of performing the requisite behaviours (low self-efficacy expectancy), they display low rates of behavioural initiative and persistence, self-devaluation and depressed affect. The current study demonstrated that low self-efficacy for coping with the demands associated with cancer was strongly predictive of depressive symptomatology. Lightsey's (1997) prospective study of stress buffers and dysphoria is a particularly good example of the similarity of the relationships established between self-efficacy, DO and depression in a non-clinical sample representative of the general population and in the physically ill population of the current study. This study examining multiple predictors of depression tested whether generalised self-efficacy [GSE] and optimism act as stress buffers and found that when exposed to stressors, persons with high GSE may become less dysphoric than persons with lower GSE. This study also found that optimism had little effect on dysphoria per se above the effects of GSE, negative life events and negative thoughts. The inference being that depression is significantly related to individuals' confidence to approach tasks that have highly valued outcomes in both the physically ill and general population. The role of self-efficacy may indeed be in partnership with other long-standing cognitive variables, which also try to explain self-regulatory behavioural phenomena, however these relationships require further investigation. Peterson et al. (1993) posited that it is individuals' manifest thoughts and beliefs that pertain most directly to their health and emotional wellbeing. Beliefs that are infused with agency and efficacy lead to health promoting activities. Those that result in passivity and demoralisation do not.

Illness Representation

The current literature did not warrant specific hypotheses regarding IR in cancer patients and indeed depression, therefore the aim of the current study was to provide a description of the IR of the sample and to highlight any relationships with depression. The results of this study indicated that there were no significant differences in IR between the depressed and non-depressed groups. There were no significant correlations between depression and IR subscales either. Moss Morris et al. (1997), examined IR in CFS patients and observed that representations of CFS as a serious and uncontrollable disease were associated with less psychological wellbeing and strongly predicted levels of distress. It was therefore expected that depression in the current sample would associate with higher scores on the identity, consequences, controllability and emotional representations of the IPQ. An explanation for the lack of association may be that as opposed to the Moss Morris CFS sample, the current sample was heterogeneous, including many different cancer types, with varied lengths of time since diagnosis and different treatment stages. These factors might have caused considerable diversity in responses and confounded any consistent pattern of association with depressed symptoms.

Certain limitations are to be considered in evaluating the results of this study. The use of a composite measure of depressed symptomatology using the HADS and ZSDS may not have been necessary to ensure that depression was accurately measured as the high correlation between these two measures indicated that each individual measure of depression was as stringent as the composite. Another limitation of the study was that all of the variables were self-reported at a single measurement point. Therefore, an unknown portion of the observed correlations could have been attributable to conceptual and content overlap among the scale items. An important direction for future research in this area could be to use longitudinal and experimental designs for investigation of specific hypotheses regarding the relationship between self-efficacy for coping, DO and depression in cancer patients. Interpretation of the results obtained requires caution as a small sample size resulted in difficulty in accurately examining the relationship between high and low self-efficacy and DO and depression. A larger sample could have resulted in greater statistical power and a greater likelihood of finding significant results. It was anticipated that the depressed and non-depressed group would be matched according to age, gender, and cancer type to reduce variation among the two groups. However, due to recruitment difficulties and time constraints, it was not possible to conduct a matched pair design. A number of cancer types were also included, and future research should aim to include matched groups in order to identify variables which are relevant to depression in each specific cancer type. Using a cross-sectional design precludes making any causal inferences. Several different causal relationships could have produced the associations found and a prospective study would be necessary to infer causality. Self-report measures were used exclusively in the study, further studies could use clinical interviews for depression and structured interviews to more comprehensively assess coping-related variables.

Whilst there is considerable support for an inverse relationship between DO and depressive symptoms in cancer patients, further research could examine situation-specific influences on what is measured by the LOT and study the relationship of state and trait optimism with depression simultaneously. A longitudinal prospective study could also examine the relationship between self-efficacy for coping with cancer and actual coping responses and resolution of demands and assess the accuracy of self-efficacy for coping judgements in predicting coping behaviour and ascertain which variable is more closely associated with depression, the self-efficacy judgement or the actual coping response. This would involve the use of a structured interview for coping.

Depressed cancer patients in this study exhibited significantly lower DO and self-efficacy for coping with cancer. However DO did not buffer against depression when self-efficacy for coping with cancer was low. The current study established that self-efficacy for coping played a protective role in depression. High self-efficacy for coping may have motivated individuals with cancer to develop and persist with goal attainment and pursue activity, which is likely to buffer against depression. Self-efficacy for coping may have confounded the role of DO in the analysis due to conceptual overlap and the role of positive illusions/optimistic schema within the self-efficacy for coping construct. However perceived capability to exercise control, whether illusory or real but unexercised, appears to decrease emotional distress over aversive events, thus belief in one's personal efficacy can, in itself produce benefits.

These findings on the predictiveness of self-efficacy in depression in cancer patients underscore the value of combining medical treatments with psychosocial treatments that counteract the collapse of personal efficacy to protect against depression and maintain quality of life. Augmenting individuals' self-efficacy for coping in relevant domains may help him or her to cope more effectively with stressful life events such as cancer and avoid developing depression.

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Table 1: Comparison of demographic, illness and treatment variables between groups

	Depressed Group	**Non-Depressed Group**	**Between Group Analysis**
Males	N = 4	N = 4	x^2 = .190(1), p= .663
Females	N = 12	N = 17	
Age	56.1± 7.3 years	52.1 ± 8.8 years	T = -1.447(35), p= .157
Time since diagnosis	3.9±1.3 months	4.3±1.3 months	T = .821(35), p= .417
Stage of disease:			
One Primary Site	N = 9	N = 12	F (2,29) = .33, p= 0.968
Regional Disease	N = 4	N = 3	
Metastatic Disease	N = 2	N = 2	
Chemotherapy	N = 11	N = 12	x^2 = .520(1), p= .471
Radiotherapy	N = 11	N = 12	x^2 = .520(1), p= .471
Surgery	N = 12	N = 17	x^2 = .190(1), p= .663
KPS	75 ± 10.3	78.1 ± 8.1	T = 1.021(35), p= .314
Previous History of depression	N = 8	N = 6	x^2 = .190(1), p= .663

Table 2 Spearmans Correlations between Self-efficacy for coping factors and Depression

	1	2	3	4	5	6	7
Depressed symptoms	r =.58 p<.001	r = .60 p<.001	r = .50 P .002	r = .46 P=.004	r = .73 P<.001	r = .54 P=.001	r = .61 P<.001

Factor names were 1 = Maintenance of Activity and Independence, 2 = Seeking and understanding Medical Information, 3 = Stress Management, 4 = Coping with Treatment-Related Side-Effects, 5 = Accepting Cancer/Maintaining Positive Attitude, 6 = Affective Regulation, and 7 = seeking Support.

Table 3 Pearsons Correlations between Illness Representation dimensions and Depression

	1	2	3	4	5	6	7	8
Depressed symptoms	r =.195 p=.248	r =.241 p=.150	r .155 P=.360	r .198 P=.239	r .360 P=.029	r .149 P=.379	r .296 P=.075	r .404 P=.013

Names of illness representation dimensions were 1 = Identity, 2 = Timeline – Acute/Chronic, 3 = Timeline Cyclical 4 = Consequences, 5 = Personal Control, 6 = Treatment Control, 7 = Illness Coherence, 8 = Emotional Representations.

Table 4 Spearmans Correlations between Self-efficacy for coping factors and DO

	1	2	3	4	5	6	7
DO	r =.34 P=.002	r = .51 P =.001	r = .51 P=.001	r = .44 P= .003	r =.75 P<.001	r =.47 P=.002	r =.42 P=.004

Factor names were 1 = Maintenance of Activity and Independence, 2 = Seeking and understanding Medical Information, 3 = Stress Management, 4 = Coping with Treatment-Related Side-Effects, 5 = Accepting Cancer/Maintaining Positive Attitude, 6 = Affective Regulation, and 7 = seeking Support.

Table 5 – Number of participants in high/low self efficacy for coping and DO combinations. (Cell sizes in the ANOVA Analysis)

	High DO	**Low DO**
High Self –efficacy for coping	N =15	N=3
Low Self-efficacy for coping	N=4	N=15

Table 6 Regression analysis summary for self-efficacy for coping and DO predicting depression scores

Variable	B	Std.Error	Beta	R Square	Adjusted R Square
Step 1 enter individually					
Self-efficacy for coping	-6.992E-03	.001	-.69**	.48	.47
DO	-4.557E-02	.011	-.58**	.34	.32
Step 2 enter together					
Coping self efficacy	-5.382E-03	.001	-.53**	.53	.50
DO	-2.175E-02	.011	-.28	.53	.50

** p<.001

An Investigation of the contribution of self-blame to the maintenance of intrusions, low mood and avoidance symptoms in posttraumatic stress disorder: A Single Case Study

ABSTRACT

The effect of addressing dysfunctional self-blame beliefs on reported symptomatology (intrusions, avoidance of going outside and low mood) in a patient with a diagnosis of Post-Traumatic Stress Disorder (PTSD) was investigated. This single case study presents the use of standard cognitive behavioural techniques with a 34-year-old woman whose chronic PTSD had resulted in emotional, social and occupational impairment. The intervention comprised four sessions focusing on ameliorating self-blame for actions during the traumatic event and the patients reaction in terms of symptomatology after it. The patient recorded daily diary ratings of mood, number of intrusions and trips taken outside and completed psychometric measures of mood, intrusions avoidance and problematic appraisals weekly. The patient also rated self-blame on three self-generated cognitions relating to self-blame at the beginning and end of each intervention session. Both within and between session reductions were noted on the self-blame cognitions. Problematic self-blame appraisals measured by the Post Traumatic Cognitions Inventory [PTCI] were also reduced at end of treatment. The patient's ratings for mood, intrusions and avoidance were also significantly reduced at end of treatment. The patient no longer met criteria for PTSD at end of treatment. These gains were maintained at one-month follow-up. Results indicated that clinically significant change on PTSD symptoms followed amelioration of dysfunctional self-blame. When discordance between the patient's perceptions of actions during the event and pre-trauma schemas was addressed emotional processing was facilitated, leading to a modification of perception of incompetence and ongoing threat and therefore preventing further intrusions, avoidance and low mood.

Appendix 1.1

Journal of Mental Health welcomes original communications and articles which have relevance to the field of mental health. Papers are accepted on the understanding that they are subject to editorial revision and that their contents have not been published elsewhere.

Manuscripts should be sent to the Executive Editor, Professor Ray J. Hodgson, Centre for Applied Public Health Medicine, Lansdowne Hospital, University of Wales College of Medicine, Cardiff CF1 8UL, United Kingdom.

To expedite assessment, 3 complete copies of each manuscript should be submitted. All submissions should be in the style of the American Psychological Association (*Publication Manual*, Fourth edition, 1994). Papers should be typed on one side of the paper, double spaced (including the references), with margins of at least 2.5 cm (1 inch). The first sheet should include the full title of the paper, a short title not exceeding 45 characters (for a running title at the head of each page), names of authors and the address where the work was carried out. All pages must be numbered. Significant delays may occur to manuscripts that do not conform to journal style. Each article should be accompanied by an abstract of not more than 150 words. Manuscripts should not exceed 6000 words in total, unless previously agreed by the Editor. The full postal address of the author who will check proofs and receive correspondence and offprints should also be included. Footnotes should be avoided where possible.

In order to improve accuracy and expedite publication, authors are requested to submit the ***final*** and ***revised*** version of their manuscript on disk. The disk should contain the paper saved in its original application software (e.g. WordPerfect or Microsoft Word), and as either Word for Macintosh, rich text format (RTF) if available, or as a text or ASCII (plain) text file. The disk should be clearly labelled with the author(s) name, paper title, file names and the software used. A good quality copy of the manuscript is ***always*** required.

References should follow the style of the American Psychological Association. All publications cited in the text should be listed following the text; similarly, all references listed must be mentioned in the text. Within the text references should be indicated by the author's name and year of publication in parentheses, e.g. (Folkman, 1992) or (Sartory & Stern, 1979), or if there are more than two authors (Gallico *et al.*, 1985). Where several references are quoted consecutively, or within a single year, within the text the order should be alphabetical, e.g. (Mawson, 1992; Parry & Watts, 1989) and (Grey, 1992; Kelly, 1992; Smith, 1992). If more than one paper from the same author(s) and year are listed, the date should be followed by (a), (b), etc., e.g. (Cobb, 1992a).

References should be listed alphabetically by author on a separate sheet(s) (double spaced) in the following standard form, capitalisation and punctuation:

a) For periodical articles (titles of journals should *not* be abbreviated):

Rachman, S., Cobb, J., Grey, S.J., McDonald, B., Mawson, D., Sartory, G. & Stern, R. (1979). The behavioural treatment of obsessive-compulsive disorders, with and without clomipramine. *Behaviour Research and Therapy*, 17, 467–478.

b) For books:

Powell, T.J. & Enright, S.J. (1990). *Anxiety and Stress Management*. London: Routledge.

c) For chapters within multi-authored books:

Hodgson, R.J. & Rollnick, S. (1989). More fun, less stress: How to survive in research. In G. Parry & F. Watts (Eds.), *A Handbook of Skills and Methods in Mental Health Research* (pp. 75-89). London: Lawrence Erlbaum.

Journal titles should not be abbreviated and unnecessary references should be avoided.

Clear, grammatical and tabular presentation is strongly encouraged.

Illustrations should not be inserted in the text. Each should be provided separately, and numbered on the back with the figure number, title of the paper, and names of the author(s). Three copies of all figures must be submitted. All photographs, graphs and diagrams should be referred to as 'Figures' and should be numbered consecutively in the text in Arabic numerals (e.g. Fig 3). The appropriate position of each illustration should be indicated in the text. A list of captions for the figures should be submitted on a separate sheet and should make interpretation possible without reference to the text. Captions should include keys to symbols. Where possible it would help to ensure greater accuracy in the reproduction of figures if the values used to generate them were supplied.

Tables should be typed on separate sheets and their approximate position in the text should be indicated. Units should appear in parentheses in the column heading but not in the body of the table. Words and numerals should be repeated on successive lines; 'ditto' or 'do' should *not* be used.

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Cardex & CHI Information

Cardex	Cardex	Cardex	Cardex	Cardex
CHI No	Surname	First Name	DOB	Address (Only for patients who don't yet have CHI Number)

Referral & Episode Information

Referral	Referral	Referral	Referral	Referral	Referral	Referral	Referral	Referral	Episode	Episode	[illegible]	Episode	Episode	Episode	Episode
GP code	Cons code	Pat Status	Ref Org	Ref Team	Ref Spec	Ref Dis	Recieve Team	DOR	Client Group 1st	Client Group 2nd(Opt)	[illegible]	Psych ID	DOA (1st)	DOD	Reason for D/C
												«psyid»			

Care Package & Evaluation Information

Care Package	Care Package	Care Package	Care Package	Care Package	Care Package	Evaluation	Evaluation	Evaluation	Evaluation	(keep Clear)
Package ID	Reason For care	Main Aim	Cont Factor	**Date Start**	**Date End**	Eval Interim	Eval Full	Qualifier	Evaluation	
1st CP										
2nd CP										
3rd CP										
4th CP										
5th CP										

Contact Information

CP	Conc?*	DOA 1	Loc	Iterv	Units	Mode	CP	Conc?*	DOA 3	Loc	Interv	Units	Mode	(Keep Clear)
1st CP							1st CP							
2nd CP							2nd CP							
3rd CP							3rd CP							
4th CP							4th CP							
5th CP							5th CP							
CP	Conc?*	DOA 2	Loc	Iterv	Units	Mode	CP	Conc?*	DOA 5	Loc	Interv	Units	Mode	
1st CP							1st CP							
2nd CP							2nd CP							
3rd CP							3rd CP							
4th CP							4th CP							
5th CP							5th CP							
CP	Conc?*	DOA 3	Loc	Iterv	Units	Mode	CP	Conc?*	DOA 6	Loc	Interv	Units	Mode	
1st CP							1st CP							
2nd CP							2nd CP							
3rd CP							3rd CP							
4th CP							4th CP							

Appendix 1.3

Reasons For Care

A detailed level of description of client problems, in psychological terms, which can broadly be linked to the DSM IV.

ANXIETY & PHOBIAS

Anxiety (Nos)
Generalised Anxiety Disorder
Panic Disorder
Separation Anxiety
Stress Adjustment
Work Stress
Monosymptomatic Phobia
Agoraphobia
Social Phobia
School Refusal
Phobic Avoidance

POST TRAUMATIC STRESS DISORDER

ANGER

Anger
Irritability
Temper Tantrums

DEPRESSION/MOOD DISORDER

Depressed Mood
Grief Reaction
Mood Disorder (Nos)

OBSESSIONAL DISORDER

Obsessive Compulsive
Ruminations

EATING DISORDER

Anorexia
Bulimia
Over-eating

SLEEP DISORDER

Insomnia
Hypersomnia

PERSONALITY DISORDER

Obsessional Personality
Schizoid
Psychopathic
Immature
Personality Disorder (NOS)

BEHAVIOURAL/MOVEMENT DISORDER

Anti-Social
Hyperactivity
Stereotypy
Motivational Disorder
Self-Injury
Tics
Tremors
Torticollis
Exhibitionism

ADDICTIONS

Gambling
Substance Use :
Drugs
Solvents
Tobacco

DEVELOPMENT/SPEECH/COGNITIVE DISORDER

Intellectual/Memory Impairment
Attention Deficit
Developmental delay
Communication Disorder
Perceptual Deficit
Learning Disability
Dyslexia
Speech/Language Disorder

PROBLEMS RELATED TO PHYSICAL ILLNESS/PAIN

Pain
Illness Behaviour.
Treatment Compliance Problem

Appendix 1.3

Reasons For Care Contd.

SEXUAL DISORDER
Sexual Identity Sexual Variation Psychosexual Dysfunction
ELIMINATION
Enuresis Encopresis
RELATIONSHIP/SOCIAL PROBLEMS
Family (NOS) Marital Parental Management Carer Management Peer Relationships Social Adjustment Social Relationships (NOS) Interpersonal Skills Deficit Social withdrawal Self-Care

Appendix 1.4

Care Aims

Defines what the therapist is broadly trying to achieve. This is agreed with the client.

CLINICAL PSYCHOLOGY : CARE AIMS

Care Aim Title	Core Definition	Criteria Notes For Clinical Psychology
Assessment	The assessment of and planning for, the needs of individuals where the aim of the care is not known or where sole purpose is to carry out an assessment.	The aim of the service is to carry out an assessment of psychological characteristics, the results of which will advise management by this or another profession, diagnoses, changes over time, and \ or will provide direct advice to the client.
Enabling	Care given to exploit an individual's potential for self care when, due to disabilities, their ultimate level of functioning is unknown.	The aim is primarily to facilitate autonomy and independence for client and/or carers, when, due to disability, the ultimate potential for independence is unknown.
Restoration	Care given to improve existing levels of independence and functioning to an optimum level, where the capacity for improvement exists but full Problem Resolution is uncertain	The aim is partial improvement/partial resolution of the problem, retrieving a degree of quality previously enjoyed.
Maintenance	Care aimed at maintaining stability within the family and maintaining an existing level of health\functioning when further improvement is unlikely.	The aim is to maintain an existing level of functioning where improvement or resolution is unlikely.
Support	Care given to sustain the patients and carers ability to cope with a sudden or slowly deteriorating condition or situation within the family.	The aim is to sustain the patients and /or carer's ability to cope with a slow deterioration in functioning.
Problem Resolution	Care given to address problems or conditions where the main aim is to restore a client\patient to his/her normal level of health and/or ability or to resolve a specific problem.	The aim is to resolve the problem under Reason for care.
Palliative Care and Bereavement Care	Care given to those whose death is not too far distant and where the aim of care is now palliative.	The aim is to alleviate distress and suffering in people whose death is not far distant, and to provide immediate support in their bereavement to the carers.
Health Promotion\Pro-Active Intervention	Care given to promote health, prevent disease and minimise the risk of ill health through early detection activities.	The aim is to promote psychological health, and maximise psychological health gains. This encompasses screening and early intervention with high risk groups, as well as health education.

Appendix 2.1

PSYCHO-ONCOLOGY

Instructions to Authors

Initial Manuscript Submission. Authors in North America should submit four copies of the manuscript (including copies of tables and illustrations) to Dr Jimmie C. Holland, Memorial Sloan-Kettering Cancer Center, 1275 York Avenue, New York 10021, USA. All other manuscripts should be submitted to Dr Maggie Watson, Department of Psychological Medicine, The Royal Marsden Hospital, Downs Road, Sutton, Surrey, SM2 5PT, UK.

Authors **must** also supply:

- an electronic copy of the final version (see section below),
- a Copyright Transfer Agreement with original signature - without this, we are unable to accept the submission, and
- permission letters - it is the author's responsibility to obtain written permission to reproduce (in all media, including electronic) material which has appeared in another publication.

Submission of a manuscript will be held to imply that it contains original unpublished work and is not being submitted for publication elsewhere at the same time. Submitted material will not be returned to the author, unless specifically requested.

Electronic submission. The electronic copy of the final, revised manuscript must be sent to the Editor **together with** the paper copy. Disks should be PC or Mac formatted; write on the disk the software package used, the name of the author and the name of the journal. We are able to use most word processing packages, but prefer Word or WordPerfect

Illustrations must be submitted in electronic format where possible. Save each figure as a separate file, in **TIFF** or **EPS** format preferably, and include the source file. Write on the disk the software package used o create them; we favour dedicated illustration packages over tools such as Excel or Powerpoint.

Manuscript Style. The language of the journal is English. All submissions including book reviews must ave a title, be printed on one side of the paper, be double-line spaced and have a margin of 3cm all round. llustrations and tables must be printed on separate sheets, and not be incorporated into the text.

- The **title page** must list the full title, short title of up to 70 characters and names and affiliations of all authors. Give the full address, including email, telephone and fax, of the author who is to check the proofs.
- Include the name(s) of any **sponsor(s)** of the research contained in the paper, along with **grant number(s)**.

pply a summary of up to 200 words for all articles [except book reviews]. A summary is a concise mmary of the whole paper, not just the conclusions, and is understandable without reference to the rest the paper. It should contain no citation to other published work.

l abbreviations except for SI symbols should be written in full the first time they appear. Generic or clinical names should be used for all compounds: materials and products should be identified. The species of any animals used should be stated precisely. Sources of unusual materials and chemicals, and the manufacturer and model of equipment should be indicated. Materials and products should be identified in the text by the generic name followed by the trade name in brackets.

Reference Style. References should be quoted in the text as name and year within square brackets and listed at the end of the paper alphabetically. All references must be complete and accurate. Online citations should include date of access. Use MedLine abbreviations for journal names. They can be found at: http://www.ncbi.nlm.nih.gov/PubMed/jbrowser.html. If necessary, cite unpublished or personal work in the text but do not include it in the reference list. References should be listed in the following style:

Brown GM, Reichlin S. 1972. Psychologic and neural regulation of growth hormone secretion, *BR J Psychiatry* **34:** 45-61.

Cox T, Cox S. 1983. The role of adrenals on the psychophysiology of stress. In *Current Issues in Clinical Psychology*, Karas E. (ed). Plenum Press: London, 3-12.

Lazarus R. *Patterns of Adjustment.*McGraw-Hill: New York, 1976

Illustrations. Supply each illustration on a separate sheet. Write the lead author's name and the figure numberon the reverse, with the top of the figure clearly indicated. Supply original **photographs**; photocopies or previously printed material will not be used. Line artwork must be high-quality laser output (not photocopies). Tints are not acceptable. Lettering must be of a reasonable size that would still be clearly legible upon reduction, and consistent within each figure and set of figures. Supply artwork at the intended size for printing. The artwork must be sized to the text width of 75 mm one column or 155 mm two columns.

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Appendix 3.1

CANCER BEHAVIOR INVENTORY (CBI-L)

This questionnaire contains many things that a person might do when receiving treatment for ncer. We are interested in your judgment of how confident you are that you can accomplish those ings. Make sure your ratings accurately reflect your <u>confidence whether or not</u> you have done it in the ist. So, your ratings reflect <u>your confidence</u> that you can do these things now (or in the near future).

Please read each numbered item. Then rate that item on how confident you are that you can complish that behavior. Circle a number on the scale. If you circle a "1" you would be stating that you e not at all confident that you can accomplish that behavior. If you circle a "9" you would be stating at you are totally confident that you can accomplish that behavior. Numbers in the middle of the scale dicate that you are moderately confident that you can accomplish that behavior.

Please rate <u>all</u> items. If you are not sure about an item please rate it as best you can.

Maintaining independence.	NOT AT ALL CONFIDENT	MODERATELY CONFIDENT	TOTALLY CONFIDENT
	1 2 3	4 5 6 7	8 9
Maintaining a positive attitude.	NOT AT ALL CONFIDENT	MODERATELY CONFIDENT	TOTALLY CONFIDENT
	1 2 3	4 5 6 7	8 9
Accepting that I have cancer.	NOT AT ALL CONFIDENT	MODERATELY CONFIDENT	TOTALLY CONFIDENT
	1 2 3	4 5 6 7	8 9
Maintaining work activity.	NOT AT ALL CONFIDENT	MODERATELY CONFIDENT	TOTALLY CONFIDENT
	1 2 3	4 5 6 7	8 9
Asking nurses questions.	NOT AT ALL CONFIDENT	MODERATELY CONFIDENT	TOTALLY CONFIDENT
	1 2 3	4 5 6 7	8 9
Remaining relaxed throughout treatments and not allowing scary thoughts to upset me.	NOT AT ALL CONFIDENT	MODERATELY CONFIDENT	TOTALLY CONFIDENT
	1 2 3	4 5 6 7	8 9
7. **Seeking support from people & groups outside the family**	NOT AT ALL CONFIDENT	MODERATELY CONFIDENT	TOTALLY CONFIDENT
	1 2 3	4 5 6 7	8 9
8. **Maintaining a daily routine.**	NOT AT ALL CONFIDENT	MODERATELY CONFIDENT	TOTALLY CONFIDENT
	1 2 3	4 5 6 7	8 9
9. **Asking technologists questions.**	NOT AT ALL CONFIDENT	MODERATELY CONFIDENT	TOTALLY CONFIDENT
	1 2 3	4 5 6 7	8 9

. Coping with hair loss.	NOT AT ALL CONFIDENT	MODERATELY CONFIDENT	TOTALLY CONFIDENT
	1 2 3	4 5 6 7	8 9
. Using denial.	NOT AT ALL CONFIDENT	MODERATELY CONFIDENT	TOTALLY CONFIDENT
	1 2 3	4 5 6 7	8 9
. Remaining relaxed throughout treatment (chemotherapy, radiation).	NOT AT ALL CONFIDENT	MODERATELY CONFIDENT	TOTALLY CONFIDENT
	1 2 3	4 5 6 7	8 9
3. Coping with physical changes.	NOT AT ALL CONFIDENT	MODERATELY CONFIDENT	TOTALLY CONFIDENT
	1 2 3	4 5 6 7	8 9
4. Ignoring things that cannot be dealt with.	NOT AT ALL CONFIDENT	MODERATELY CONFIDENT	TOTALLY CONFIDENT
	1 2 3	4 5 6 7	8 9
5. Actively participating in treatment decisions.	NOT AT ALL CONFIDENT	MODERATELY CONFIDENT	TOTALLY CONFIDENT
	1 2 3	4 5 6 7	8 9
16. Sharing feelings of concern.	NOT AT ALL CONFIDENT	MODERATELY CONFIDENT	TOTALLY CONFIDENT
	1 2 3	4 5 6 7	8 9
17. Remaining relaxed while waiting at least one hour for my appointment.	NOT AT ALL CONFIDENT	MODERATELY CONFIDENT	TOTALLY CONFIDENT
	1 2 3	4 5 6 7	8 9
18. Expressing personal feelings of anger or hostility.	NOT AT ALL CONFIDENT	MODERATELY CONFIDENT	TOTALLY CONFIDENT
	1 2 3	4 5 6 7	8 9
9. Seeking information about cancer or cancer treatments.	NOT AT ALL CONFIDENT	MODERATELY CONFIDENT	TOTALLY CONFIDENT
	1 2 3	4 5 6 7	8 9
0. Expressing negative feelings about cancer.	NOT AT ALL CONFIDENT	MODERATELY CONFIDENT	TOTALLY CONFIDENT
	1 2 3	4 5 6 7	8 9
1. Keeping busy with activities.	NOT AT ALL CONFIDENT	MODERATELY CONFIDENT	TOTALLY CONFIDENT
	1 2 3	4 5 6 7	8 9

2. Finding an escape.
NOT AT ALL CONFIDENT MODERATELY CONFIDENT TOTALLY CONFIDENT
1 2 3 4 5 6 7 8 9

3. Reducing any anxiety associated with getting my blood drawn.
NOT AT ALL CONFIDENT MODERATELY CONFIDENT TOTALLY CONFIDENT
1 2 3 4 5 6 7 8 9

4. Maintaining a sense of humor.
NOT AT ALL CONFIDENT MODERATELY CONFIDENT TOTALLY CONFIDENT
1 2 3 4 5 6 7 8 9

25. Accepting physical changes or limitations caused by cancer treatment.
NOT AT ALL CONFIDENT MODERATELY CONFIDENT TOTALLY CONFIDENT
1 2 3 4 5 6 7 8 9

26. Seeking consolation.
NOT AT ALL CONFIDENT MODERATELY CONFIDENT TOTALLY CONFIDENT
1 2 3 4 5 6 7 8 9

27. Reducing any nausea associated with treatment (chemotherapy, radiation)
NOT AT ALL CONFIDENT MODERATELY CONFIDENT TOTALLY CONFIDENT
1 2 3 4 5 6 7 8 9

28. Maintaining hope.
NOT AT ALL CONFIDENT MODERATELY CONFIDENT TOTALLY CONFIDENT
1 2 3 4 5 6 7 8 9

29. Asking physicians questions.
NOT AT ALL CONFIDENT MODERATELY CONFIDENT TOTALLY CONFIDENT
1 2 3 4 5 6 7 8 9

30. Doing something, anything.
NOT AT ALL CONFIDENT MODERATELY CONFIDENT TOTALLY CONFIDENT
1 2 3 4 5 6 7 8 9

31. Managing pain.
NOT AT ALL CONFIDENT MODERATELY CONFIDENT TOTALLY CONFIDENT
1 2 3 4 5 6 7 8 9

32. Managing nausea and vomiting.
NOT AT ALL CONFIDENT MODERATELY CONFIDENT TOTALLY CONFIDENT
1 2 3 4 5 6 7 8 9

33. Controlling my negative feelings about cancer.
NOT AT ALL CONFIDENT MODERATELY CONFIDENT TOTALLY CONFIDENT
1 2 3 4 5 6 7 8 9

LIFE ORIENTATION TEST

Name:...

Date:... Record Number:...

Please be as honest and accurate as you can be throughout. Try not to let your response to one statement influence your responses to other statements. There are no 'correct' or 'incorrect' answers. Answer according to your **own** feelings, rather than how you think 'most people' would answer. Using the scale below, write the appropriate letter in the box beside each statement.

A	**B**	**C**	**D**	**E**
I agree a lot	*I agree a little*	*I neither agree or disagree*	*I disagree a little*	*I disagree a lot*

1. In uncertain times, I usually expect the best. ☐
2. It's easy for me to relax. ☐
3. If something **can** go wrong for me, it **will**. ☐
4. I always look on the bright side. ☐
5. I'm always optimistic about my future. ☐
6. I enjoy my friends a lot. ☐
7. It's important for me to keep busy. ☐
8. I hardly ever expect things to go my way. ☐
9. Things never work out the way I want them to. ☐
10. I don't get upset easily. ☐
11. I'm a believer in the idea that 'every cloud has a silver lining'. ☐
12. I rarely count on good things happening to me. ☐

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OUR VIEWS ABOUT YOUR ILLNESS

isted below are a number of symptoms that you may or may not have experienced since your ness. Please indicate by circling *Yes* or *No*, whether you have experienced any of these symptoms nce your illness, and whether you believe that these symptoms are related to your illness.

	I have experienced this symptom *since my illness*			**This symptom is *related to my illness***	
ain	**Yes**	**No**	________	**Yes**	**No**
ore Throat	**Yes**	**No**	________	**Yes**	**No**
ausea	**Yes**	**No**	________	**Yes**	**No**
reathlessness	**Yes**	**No**	________	**Yes**	**No**
Veight Loss	**Yes**	**No**	________	**Yes**	**No**
atigue	**Yes**	**No**	________	**Yes**	**No**
tiff Joints	**Yes**	**No**	________	**Yes**	**No**
ore Eyes	**Yes**	**No**	________	**Yes**	**No**
Vheeziness	**Yes**	**No**	________	**Yes**	**No**
leadaches	**Yes**	**No**	________	**Yes**	**No**
Jpset Stomach	**Yes**	**No**	________	**Yes**	**No**
leep Difficulties	**Yes**	**No**	________	**Yes**	**No**
Dizziness	**Yes**	**No**	________	**Yes**	**No**
oss of Strength	**Yes**	**No**	________	**Yes**	**No**

We are interested in your own personal views of how you now see your current illness.

Please indicate how much you agree or disagree with the following statements about your illness by ticking the appropriate box.

	VIEWS ABOUT YOUR ILLNESS	**STRONGLY DISAGREE**	**DISAGREE**	**NEITHER AGREE NOR DISAGREE**	**AGREE**	**STRONGLY AGREE**
P1	**My illness will last a short time**					
P2	**My illness is likely to be permanent rather than temporary**					
P3	**My illness will last for a long time**					
P4*	**This illness will pass quickly**					
	VIEWS ABOUT YOUR Illness	**STRONGLY DISAGREE**	**DISAGREE**	**NEITHER AGREE NOR DISAGREE**	**AGREE**	**STRONGLY AGREE**
IP5*	**I expect to have this illness for the rest of my life**					
IP6	**My illness is a serious condition**					
IP7	**My illness has major consequences on my life**					
IP8	**My illness is easy to live with**					

	My illness does not have much effect on my life					
	My illness strongly affects the way others see me					
	My illness has serious financial consequences					
	My illness strongly affects the way I see myself as a person					
	My illness causes difficulties for those who are close to me					
*	My illness has a negative impact on me					
*	My illness is not a problem for me					
*	My illness doesn't bother me much					
	There is a lot which I can do to control my symptoms					
	What I do can determine whether my illness gets better or worse					
	Recovery from my illness is largely dependent on chance or fate					
*	The course of my illness depends on me					
*	Nothing I do will affect my illness					
*	I have the power to influence my illness					
*	My actions will have no affect on the outcome of my illness					
*	My symptoms are beyond my control					
5*	My symptoms will be around whatever I do					
6	My illness will improve in time					
7	There is very little that can be done to improve my illness					
8*	My treatment will be effective in curing my illness					
9*	The negative effects of my illness can be prevented (avoided) by my treatment					
	VIEWS ABOUT YOUR ILLNESS	STRONGLY DISAGREE	DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE	STRONGLY AGREE
0*	My treatment can control my illness					
1*	There is nothing which can help my condition					
2	The symptoms of my condition are puzzling to me					
3	My illness is a mystery to me					
4*	I don't understand my illness					
5*	My illness doesn't make any sense to me					
6*	I have a clear picture or understanding of my condition					
37	The symptoms of my illness change a great deal from day to day					
38*	My symptoms come and go in cycles					
39*	My illness is very unpredictable					

0*	**My illness condition is present all the time.**					
1*	**I go through cycles in which my illness gets better and worse.**					
2*	**I experience my illness symptoms pretty much all of the time.**					
3*	**The symptoms of my illness are distressing to me**					
44	**I get depressed when I think about my illness**					
45*	**When I think about my illness I get upset**					
46*	**My illness makes me feel angry**					
47*	**My illness does not worry me**					
48*	**Having this illness makes me feel anxious**					
49*	**I worry a lot about my illness**					
50*	**My illness makes me feel afraid**					

CAUSES OF MY ILLNESS

e are interested in what you consider may have been the cause of your illness. As people are very different, ere is no correct answer for this question. We are most interested in your own views about the factors that aused your illness rather than what others including doctors or family may have suggested to you. Below is a st of possible causes for your illness. Please indicate how much you agree or disagree that they were causes r you by ticking the appropriate box.

	POSSIBLE CAUSES	STRONGLY DISAGREE	DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE	STRONGLY AGREE
C1	Stress or worry					
C2	Hereditary - it runs in my family					
C3	A Germ or virus					
C4	Diet or eating habits					
C5	Chance or bad luck					
C6	Poor medical care in my past					
C7	Pollution in the environment					
C8	My own behaviour					
C9	My mental attitude e.g. thinking about life negatively					
C10	Family problems or worries caused my illness					
C11*	Overwork					
C12*	My emotional state e.g. feeling down, lonely, anxious, empty					
C13*	Ageing					
C14*	Alcohol					
C15*	Smoking					
C16*	Accident or injury					
C17*	My personality					
C18*	Altered immunity					

In the table below, please list in rank-order the three most important factors that you now believe caused YOUR illness. You may use any of the items from the box above, or you may have additional ideas of your own.

The ~~most~~ important causes for me:-

1. ______________________________

2. ______________________________

3. ______________________________

INFORMATION SHEET FOR PATIENTS/VOLUNTEERS IN CLINICAL RESEARCH PROJECT —

Title of Project

Depression in Cancer Patients: An Examination of the Role of Self-Efficacy for Coping with Cancer and Dispositional Optimism.

You are being invited to participate in a study being carried out by the Department of Psychological Medicine at Glasgow University. The aim of this study is to understand more about the links between our coping beliefs, our level of optimism and depression.

Purpose of the Study

Previous research has shown that it can be very difficult to adjust to having cancer, and that often people feel depressed due to this. It has been shown that problems like these are often associated with our beliefs about how much we will be able to cope with and whether we expect good or bad things to happen to us. It is hoped that this research will help to prevent difficulties with coping with cancer from developing into more serious problems like depression.

Procedure

If you choose to participate in this study you will be asked to sign a consent form indicating that you have agreed to take part. You will then be asked to complete some questionnaires relating to you feelings about your illness, how you are coping, and about your mood and thoughts generally. Involvement in this study will take approximately one hour of your time.

It should be noted that participation in this study may be of no direct benefit to you, but could help in the development of treatment, which could benefit future patients. All information you give as part of this research will be treated as confidential. If you wish to take part in this research then your GP and consultant oncologist will be informed of this. If any of your responses indicate that your mood is very low or that you are very distressed then Ms Wyne can discuss with you how to get help with this, and with your consent inform your consultant. If you do not wish to participate in this study in this study or wish to withdraw at any time after being involved, your care will in no way be affected. If you want to discuss this research further or you have any questions you would like answered then please contact:

Ms Tara Wyne,
Department of Psychological Medicine,
Academic Centre,
Gartnavel Royal Hospital,
1055 Great Western Road, Glasgow.
Tel No: 0141 211 3941

Thank you for your interest in this study.

CONSENT FORM

Depression in Cancer Patients: An Examination of the Role of Self-Efficacy for Coping with Cancer and Dispositional Optimism.

By signing this form you give consent to you participation in the project whose title is at the top of this page. You should have been given a complete explanation of the project to your satisfaction and have been given the opportunity to ask questions. You should have been given a copy of the participant information sheet to read and keep. Even though you have agreed to take part in this research, you may withdraw your consent at any time, without the need to explain why and without prejudice to your care.

Consent:

I,..(PRINT)

Of..

Give my consent to the research procedures above, the nature, purpose and possible consequences of which have been explained to me.

By...

Patients signature...Date.............

Doctor's signature...

West Glasgow Hospitals

PART OF THE NORTH GLASGOW UNIVERSITY HOSPITALS NHS TRUST

WEST ETHICS COMMITTEE
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Our Ref: AHT

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Please reply to: Mrs A H Torrie
SECRETARY - WEST ETHICS COMMITTEE

e:mail - andrea.torrie.wg@northglasgow.scot.nhs.uk

18 October, 2000

Ms T Wyne
Department of Psychological Medicine
Academic Centre
Gartnavel Royal Hospital
Glasgow

Dear Ms Wyne,

00/100(2) Ms T Wyne - **Depression in Cancer patients: An examination of the role of self efficacy for coping with Cancer and Dispositional Optimism**

The Committee at the meeting held on 17 October, 2000 ratified Chairman's approval given in his letter dated 11th October, 2000. This study now has full and unqualified Ethics Committee approval.

Please note that the approval contained in this letter is valid for all sites which form part of the North Glasgow Trust. If however, this research is to be carried out at sights within the North Glasgow Trust other than the one covered by this letter, then a covering letter signed by the person responsible for the research on that site should be sent listing names, titles and addresses of all collaborating researchers. A copy of this approval letter should also be passed to them.

It should be noted that although Ethics Committee approval has been granted, Trust Management approval is still required. This should be obtained through the Research & Development Office at Gartnavel General Hospital (Miss W Burton tel No. 0115).

Due to the large volume of trivial and expected Serious Adverse Events (SAEs) being reported to the Committee, the Committee has taken the decision that they only wish to review SAEs where they are **serious and unexpected and where the investigator believes them to be unusual for the study under consideration.**

In situations where the study has a Data Monitoring Committee, then the Ethics Committee would only require sight of the summarised data at regular intervals of 6 months rather than individual reports.

In respect of MREC approved studies, only events which fall into the above categories and have occured at our local site should be passed to the Committee. All other events should be reviewed by MREC and should not come before this Committee.

The Committee would like to remind investigators that a copy of the Patient Information Sheet and Consent Form should be given to patient/volunteers for retaining.

Kind regards.

Yours sincerely,

Andrea H Torrie
SECRETRARY - WEST ETHICS COMMITTEE

Data used to calculate power

Means for the CBI as a function of the high versus low (dichotomised) scores on the Helplessness/Hopelessness scale of the Mental Adjustment to Cancer Scale.

Group One – CBI mean and standard deviation = 229.12 ± 30.62

Group Two - CBI mean and standard deviation = 207.18 ± 46.58