Validation of the Flexibility of Responses to Self-Critical Thoughts Scale (FoReST) in a Clinical population

And Clinical Research Portfolio

Judith McCluskey, BSc (Hons)

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Institute of Mental Health and Wellbeing
Gartnavel Royal Hospital,
1st Floor, Admin Building,
University of Glasgow,
Glasgow
G12 0XH

University of Glasgow | Institute of Health & Wellbeing

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Judith McCluskey

TABLE OF CONTENTS

CHAPTER1: SYSTEMATIC REVIEW

Psychological interventions that seek to improve subjective well-being: A systematic review of randomised controlled trials.

Judith McCluskey[1]

[1] Institute of Mental Health and Wellbeing

Address for correspondence:

Institute of Mental Health and Wellbeing
Gartnavel Royal Hospital,
1st Floor, Admin Building,
University of Glasgow,
Glasgow
G12 0XH

E.mail: judith.mccluskey@ggc.scot.nhs.uk

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ABSTRACT

Background: It has long been acknowledged that mental health and well-being is more than just the absence of mental illness. Subjective well-being (SWB) has been defined as a person's cognitive and affective evaluations of his or her life. SWB can reflect a multidimensional evaluation, including cognitive judgments of life satisfaction and also appraisals of moods and emotions.

Objective: This systematic review aimed to synthesis and critically appraise the research findings of Randomised controlled trials (RCT) that have evaluated psychological interventions aimed at improving 'subjective well-being' (SWB). The potential risk of bias in each study's methodology was evaluated through the application of the Cochrane Risk of Bias Tool.

Method: A literature search was conducted across five main psychological and medical databases, with no date restrictions applied. Eleven out of three hundred and thirty-seven studies identified, via database and reference list searches, met inclusion criteria and were included in the review.

Results/Conclusions: Overall, the studies recruited a total sample of 1976 participants; of which 19% (n=385) were male. Five different psychological therapies were evaluated in the studies, with the most common being: Acceptance and Commitment therapy, Positive Psychology interventions and Mindfulness. The two most widely used assessment measures across the studies were the Mental Health Continuum- Short Form (MHC-SF) and Positive and Negative Affect Scale (PANAS). When assessing Risk of Bias, the studies varied greatly in their performance across the domains. Attrition bias, bias due to the handling of incomplete outcome data, was the category identified to show the highest risk of bias. Selection bias, bias due to selective outcome reporting was found to be the category with the lowest risk of bias across all the studies.

Critique of Methodology: This review was unable to fully capture all of the relevant research available and therefore a critique of the methodology has been provided. This outlines difficulties with the search strategy employed, an overview of some of key literature that was omitted and the potential impact this literature has when drawing conclusions from this review.

Key Words: Randomised controlled trial, Subjective well-being, Flourishing, Positive Psychology, Acceptance and Commitment Therapy

1. INTRODUCTION

Historically, mental health research has tended to place more emphasis on psychological dysfunction and mental illness rather than mental wellness and stability. Health and well-being is often equated with the absence of illness, rather than the presence of wellness (Ryff & Singer, 1996). Over the past decade, there has been increasing interest in a more inclusive and progressive approach, which builds on the fundamental assumption that "human beings possess an inherent developmental tendency toward personal growth and fulfilment" (Fledderus, Bohlmeijer, Smit & Westerhof, 2010). This approach is consistent with the World Health Organisations definition of Mental Health (2004) that states:

"*Mental health is a state of well-being in which the individual realises his or her own abilities, can cope with normal stresses of life, can work productively, and is able to make a contribution to his or her community."*

This WHO definition identifies three core components of mental health: 'well-being', 'effective functioning in individual life' and the 'effective functioning in community life'.

Keyes (2007) defines mental health as the lack of mental illness combined with the opportunity to develop and flourish with high levels of emotional, psychological and social well-being. He describes adults with complete mental health, as ***flourishing*** in life, experiencing high levels of well-being. Adults with incomplete mental health are ***languishing*** in life, with low levels of well-being.

This distinction between mental illness and mental health is of great importance, because it introduces possibilities for mental health professionals to support both the *reduction* of mental illness and the *improvement* of mental health (Slade, 2010). The efficacy of mental health interventions should not narrowly base 'good outcome' on the reduction of symptoms of mental illness or disability (White, Imperiale & Perera, 2016). This in turn, has led to greater emphasis on positive psychology and research that is focused more on the recovery of mental health (Schrank et al., 2013; Boiler et al., 2013). Positive Psychology is the scientific study of human flourishing, and an applied approach to optimal functioning. It has also been defined as the study of the strengths and virtues that

enable individuals, communities and organisations to thrive (Gable & Haidt, 2005). The term "positive psychology" appeared as a keyword in only seven scientific articles in 2000, however this number has exploded to over 100 per year since 2008 (Ciarrochi, Kashdan & Harris, 2013).

Positive psychology concepts, such as 'psychological well-being', 'subjective well-being', 'quality of life', 'positive emotions' and 'human strengths' are not completely new in psychiatry and psychology and there is research dating back as far as the 1950's to support the benefits of targeting well-being in therapy. For example, Parloff, Kelman & Frank (1954) proposed that the goals of therapy were "increased personal comfort and effectiveness". Maslow (1968) and Rogers (1961), founders within humanistic psychology also defined concepts such as 'self-realisation' and 'self-actualisation' to be final therapeutic goals.

Subjective well-being (SWB)

The concept of 'subjective well-being' has traditionally been viewed from two differing perspectives; the Clinical and the Psychological. Whereas, the "*Clinical tradition*", operationalises well-being through measures of depression, distress or anxiety, the "*Psychological tradition*" operationalises well-being in terms of one's subjective evaluation of life satisfaction (Keyes, 2002). Diener, Oishi & Lucas (2002) define '***subjective well-being'*** as "a person's cognitive and affective evaluations of his or her life". He wrote that this should have three hallmarks; Firstly, SWB should be subjective and reflect a concern for the individual views themselves; secondly, it should include positive measures of an individual's attitude towards life (as opposed to negative ones) and thirdly, it should typically include a global assessment of all areas of an individual's life (Diener, 1984).

Salama-Younes (2011, p226) contended that subjective well-being (SWB) could be defined as "appraisals an individual makes about the quality of their lives". It can be summarised into three major constructs; the presence of positive affect, the absence of negative affect and high levels of life satisfaction. Furthermore, it is suggested that subjective well-being consists of two compatible traditions: ***hedonic,*** emotional well-being, which focuses on feelings towards life

and ***Eudaemonic*** well-being, which focuses on functioning in life. (Keyes et al, 2008). The 'positivity ratio' (the balance of positive and negative affect) plays a key role in well-being and in defining whether a person flourishes (Larsen & Prizmic, 2008).

A Meta-analysis by Lamers, Boiler, Westerhof, Smit & Bohlmeijer (2011) showed that the promotion of SWB can lead to considerable health gains for the individual and society. Studies indicate that measures of symptoms of mental illness, such as depression, correlate negatively and modestly with measures of SWB and an increase in psychological well-being was also shown to protect against the relapse and recurrence of depression (Ryff & Keyes, 1995, Wood & Joseph, 2010).

Measures of Subjective Well-being

Demand is growing for the collection and publication of measures of SWB. One incentive for including well-being measures in research is that they bring to the attention of patients and therapists areas of high functioning, which may have been easily overlooked. Self-report measures are considered to be valid, given the individual's ability to evaluate their own experience of well-being. However, clinical researchers need to be aware of the impact of possible response and memory bias. Schwarz & Strack (1999) highlighted that self-reported judgements of well-being can be influenced by a range of factors, such as mood, beliefs and culture. As self-report measures represent one dimension of assessment, it is recommended to integrate them with a range of different methods, such as semi-structured interviews, which may increase accuracy (McDonald, 2008).

There has been considerable progress in the field of measuring SWB and Jovanovic (2015, p 154) stated, "researchers have reached a broad consensus on the best self-report instruments for assessing SWB". He noted the two gold standard and most frequently used measures to be; ***PANAS: The Positive and Negative Affect Schedule*** (Watson, Clark & Tellegen, 1998) and ***SWLS: The Satisfaction with Life scale*** (Diener, Emmons, Larsen & Griffin, 1985). In recent years there have been efforts to develop measures that consolidate multiple aspects of well-being, assessing both hedonic and eudaimonic components.

Currently the most prominent and popular well-being measure in positive psychology focused research is; ***MHC-LF/MHC-SF: The Mental Health Continuum- Long Form and Short Form*** (Keyes, 2002; Keyes et al., 2008), which incorporates three components; Emotional well-being, Psychological well-being and Social well-being

1.1 Rationale for The Current Systematic Review

Seligman (2001) reported that evidence based research and empirical validation is essential for well-being/positive psychology interventions and assessments to be viable and relevant. A review by Hone, Jarden, Schofield & Duncan (2014) summarised four different theoretical, conceptual and operational definitions of SWB/flourishing and defined their psychometric properties. However, not only is there a need to understand the correlates of SWB, it is also important to identify the types of interventions that are being proposed to improve SWB and how these are being evaluated. To the author's knowledge no systematic reviews have been conducted that have sought to synthesise current research into psychological interventions aimed at improving SWB. It was decided that focusing on randomised controlled trials (RCTs) would permit consideration of the most stringent and rigorous research that has been conducted to date.

PRISMA (Preferred Reporting Items for Systematic Reviews and Meta Analyses) documents the importance of assessing "risk of bias" when evaluating studies included in a systematic review (Liberati, et al., 2009). Therefore, using the Cochrane Risk of Bias tool, this review focused on the internal validity of each study and the extent to which it is free from bias.

1.2 Aim of the systematic review

This systematic review aimed to synthesise and critically appraise the research findings of RCTs that have evaluated psychological interventions aimed at improving 'subjective well-being' (SWB).

1.3 Review questions

Specifically, this review addressed the following questions:

- What types of psychological or psychosocial interventions aimed at enhancing SWB have been evaluated?
- What modes of delivery (group/individual) and methods of support (online/face to face/self-help) have been used in these interventions?
- What range of standardised measures are being used to measure SWB?
- What are the potential risks of bias inherent in the relevant studies?

2. METHOD

The Centre of Reviews and Dissemination (CRD) guidance for conducting systematic reviews was followed, with results of the review reported in accordance with PRISMA guidelines (2015).

2.1 Search and screening procedures

A literature search was conducted on the main psychological and medical databases: Web of Science (Includes: Web of Science, MEDLINE), EBSCO Host Medical and Psychology related resources (Includes: CINAHL, PsycINFO and Psychology and Behavioural Science), and OVID (Includes: EMBASE).

The search was last conducted on the 2nd May 2016 with no date restriction, covering all publications available until the date the search was carried out. Databases were searched using the following terms identified from the title, abstract, key words or medical subject headings:

('subjective well?being' OR 'emotional well?being' OR 'psych well?being' OR 'social well?being' OR 'inner well?being' OR 'mental well?being' OR 'positive well?being' OR 'positive mental health' OR 'flourish*') AND ('randomi* controlled trial*') AND ('psychotherapy' OR 'psycho* therapy' OR 'psycho* intervention*').*

The search terms and the use of MeSH heading were adjusted for the individual databases as required. The search was refined by document types, (articles) and languages, (English) through the databases online electronic systems (Web of Science, EBCOS Host, and EMBASE). The table of contents of two additional journals, which were identified as frequently publishing potentially relevant papers, were also searched: The Journal of Contextual Behavioural

Science (http://contextualscience.org) and International Journal of Wellbeing (www.internationaljournalofwellbeing.org) for the same time period. The reference lists of all included papers were also searched to identify any additional studies.

2.2 Inclusion criteria

The titles and then abstracts of all studies generated by this search were read in order to select the appropriate studies that met the following inclusion criteria:

(i) The paper should report a randomised controlled trial (RCT) with a comparative group.

(ii) The study should use a standardised measure of SWB, pre and post intervention (A systematic review by Schrank et al., (2013) provides a comprehensive list of standardised subjective well-being measures, see Appendix 1.4).

(iii) The study should include a psychological or psychosocial intervention hypothesised to improve SWB.

(iv) The study should be published in a peer-reviewed journal.

2.3 Exclusion criteria

Studies were excluded from the review if:

(i) The paper was not available in English.

(ii) The paper was a review, case study, protocol or discussion article.

(iii) The intervention's primary aim was to improve something other than SWB for example, chronic health symptoms.

2.4 Eligible studies

After the removal of duplicates, using Thomson Reuters™ reference manager Endnote, the remaining titles were reviewed and then the abstracts of the potentially relevant articles were screened. Finally, the full-texts of the selected articles were obtained and assessed for eligibility.

The above search criteria generated 337 papers, which decreased to 238 when duplicates were removed. Applying the inclusion and exclusion criteria resulted in 11 eligible studies to be included in the review.

2.5 Data extraction, synthesis and quality assessment

PRISMA encourages the use of the Cochrane Risk of Bias Tool to evaluate risk of bias in studies and is based on domains for which there is good empirical evidence (Higgins & Green, 2011; Liberati et al., 2009). The tool comprises of five domains: Selection bias, Performance bias, Detection bias, Attrition bias and Reporting bias. Within each domain, assessments are made for one or more items, which may cover different aspects of the domain, or different outcomes. Appendix 1.1 shows the recommended list of items (Liberati et al., 2009; Higgins & Green, 2011). Every domain has a specific section in the risk of bias table and within each section there is a space to assign a judgement of 'low', 'high' or 'unclear' risk of bias. Appendix 1.2 shows the criteria for judging risk of bias.

3. RESULTS

3.1. Overview of included studies

The PRISMA flow diagram of study selection provides a summary of the process used to select the studies included in this review (See Figure 1). Of the 335 studies identified through the electronic search and 4 through additional sources, 11 were found to meet the inclusion criteria. Table 1 provides the breakdown of the excluded studies.

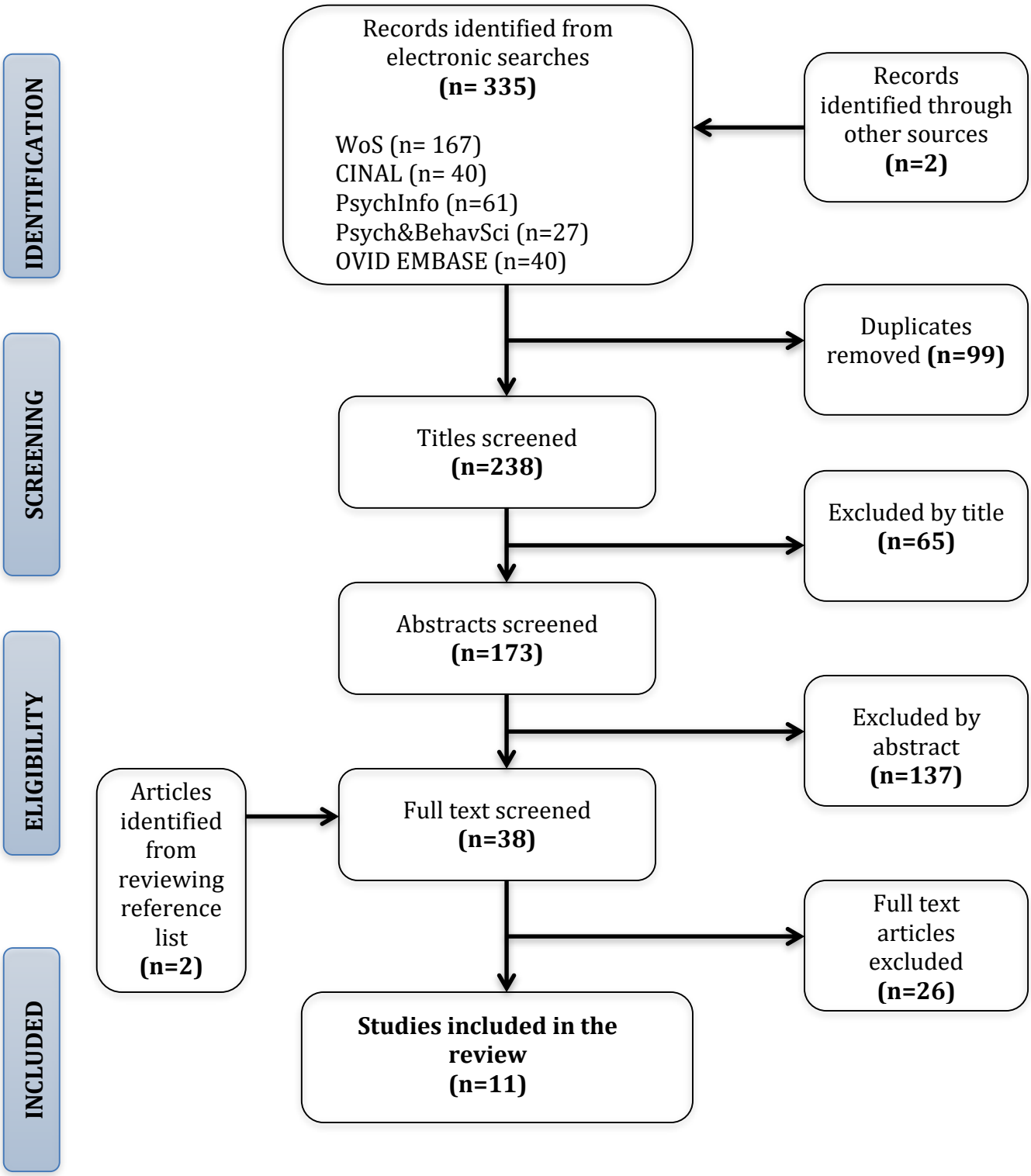


Figure 1: Flow chart of the Selection process

Table 1: Summary of excluded studies at each stage of screening

Reason for exclusions	By Title	By Abstract	By Full text
Not a Randomised Controlled Trial	48	62	5
Did not include a standardised measure	0	41	9
Not a psychological intervention	7	24	8
Primary outcome was not well-being	0	10	4
Not published in a peer reviewed journal	10	0	0
Total:	65	137	26

3.2. Sample characteristics

Overall, the studies recruited a total sample of 1976 participants; of which 19% (n=385) were male. The median value for the mean age of participants was 39 years (IQR = 34-45). Morledge et al. (2013) did not report a mean age for their sample and therefore could not be included into these calculations.

The studies were conducted in a range of different countries; two from Netherlands (Bohlmeijer, Lamers & Fledderus, 2015; Fledderus et al., 2010), three from USA (Morledge et al., 2013; Neff & Germer, 2013; Shapiro, Brown, Thoresen & Plante, 2011), three from Australia (Giannopoulos & Vella-Brodrick, 2011; Mitchell, Stanimirovic, Klein & Vella-Brodrick, 2009; Seear & Vella-Brodrick, 2013), two from the UK (Howells, Ivtzan & Eiroa-Orosa, 2016; Schrank et al., 2016) and 1 from Finland (Rasanen, Lappalainen, Muotka, Tolvanen & Lappalainen, 2016). A full summary of the included studies is shown in Table 2.

Table 2: Summary of extracted data from the included studies

Study	*Population*	*N Mean Age*	*Intervention*	*Control*	*Well-being Measure*	*Other measures*	*Attrition (%)*	*Findings (Reported effect sizes)*	*Reported limitations*
Bohlmeijer, Lamers, & Fledderus, 2015 Netherlands	Individuals with mild to moderate depressive symptoms. Recruited online, via adverts in local newspapers.	N= 376 42 (18-73) 30% male	Acceptance and Commitment therapy (ACT) (ACT; n=250) Self-help, Living life to the full book. Completed 9 modules including experiential exercises, metaphors and mindfulness exercises. Received email support and feedback from a counsellor.	Waiting list control (W-L; n=126)	MHC-SF Completed at: Baseline (T0) Post intervention at nine weeks (T1) Three month follow up (T2)	CES-D AAQ-II	n/a	When compared to control group, those in ACT group; flourishing increased from 5% (T0) to 14% (T1) and was maintained at (T3)	Majority of participants were middle aged, well-educated females: cannot generalise findings to all adults. Waiting list condition used as control.
Fledderus, Smit, Bohlmeijer & Westerhof, 2010 Netherlands	Individuals with mild to moderate distress. Recruited via press articles, leaflets, posters and through psychologists working in 7 different mental health teams.	N = 93 49 (24-71) 17.3% male	Acceptance and Commitment Therapy (ACT) and mindfulness. (n=49) Group intervention: 8 x 2hr sessions based on 6 core processes of ACT. 2 licensed psychologists provided therapy to 7 intervention groups across 7 different mental health organisations. All psychologists received 3-day training and standardised manual to follow.	Waiting list control (n= 44)	MHC-SF Completed at: Baseline (T0) Post treatment at 2 months (T1) Five month follow up (T2)	AAQ-II	14.3 %	Intervention group had significantly more improvement in psychological wellbeing at (T1; d= .53) and (T2; d = .64)	Small sample size, low number of males; cannot generalise findings to all adults. Waiting list condition used as control. The follow up period (T2) was relatively short. Did not address research question of whether improvement in mental health was independent from decline in mental illness.
Giannopoulos & Vella-Brodrick, 2011 Australia	Self-selected online community sample.	N = 218 33 (18-64) 34% male	5 online intervention gps based on Seligman's (2005) positive well-being interventions. 1) Pleasure gp (n=42) 2) Engagement gp (n=37)	No intervention group (n=33)	MHC-SF OTH Completed at: Baseline (T0)		> 50% discontinued or only completed their interventi	There was a significant difference in reported well-being for the 6 gps from (T0) to (T1): F (5,185) = 2.889, p= .015.	Majority of participants were well educated and financially comfortable and only available to those with internet access.

	No recruitment method reported.		3) Meaning gp (n=35) 4) Pleasure/engagement /meaning gp (n=40) 5) Daily events gp (n=31)		Post intervention (T1) Two week follow up (T2)		on 2-6 times over the 2 week period.	The effect size was calculated using η^2 = .072 (indicating a medium difference).	Only short-term effects of positive interventions were examined. Participants awareness of this being a happiness study and the sole use of self-report measures may have led to some participants responding in a specific manner.
Howells, Ivtzan, & Eiroa-Orosa, 2016 UK	Self-selected online community sample. Represented 11 countries (Including Australia, USA, Poland, Switerland, Malta, Sweden and Singapore) Recruited via advertisements in e-newsletters, Facebook & linkedIn.	N = 121 40.7 (s.d = 10.6) 13.4% male	Intervention group engaged with Headspace app. (n=57) The app would deliver daily activities based on mindfulness practice. They were encouraged to commence and self-administer the intervention daily for 10 days. Contacted on day 11 for follow up (maximum of 3 emails sent)	The control condition (n=64) engaged in a neutral task; a list making application called Catch Notes.	SWLS FS PANAS Baseline (T0) Post intervention follow up (T1)	CES-D	63.74% attrition rate after enrolling on study; further 37.95% between T0 and T1.	Statistically significant improvements were found only for positive affect (measured by PANAS scale) η^2 = .071. No significant improvements were observed in the remaining outcomes (life satisfaction, flourishing and negative affect).	Internal validity was compromised by the heightened ecological validity. Lack of internal control is noteworthy. Sample was predominately well educated, middle-aged, Caucasian females living in Australia; cannot generalise findings to all adults.
Mitchell, Stanimirovic, Klein, & Vella-Brodrick, 2009 Australia	Self-selected online community sample. Had to be >18 years and Australian residents. Recruited through adverts on university online networks, websites, eNewsletters and email	N = 160 37 (18-62) 17% male	2 intervention gps: 1) A Positive Psychology Strengths based intervention (Seligman et al, 2005, '*Using signature strengths in a new way*'). (n= 48) 2) A Problem solving, CBT intervention (n=58) Both active interventions were delivered via a	A placebo control group; an abbreviated version of the problem solving gp without utilising any of the interactive web features. (n= 54)	PWI-A SWLS PANAS OTH Completed at: Pre intervention (T0) Post intervention (T1) 3 month follow up (T2)	DASS-21	69% at post-assessment and 83% at 3 month follow up.	PWI-A: Gp 1) showed a significant increase in PWI from T0, T1 and to T2, F(4,312)= 2.81, P= .02. Gp 2) showed no change over time SWLS: no significant interaction between intervention gps and time. F(2,157)= .84, P= .43.	Small sample size. Predominately female, highly-educated, employed; limiting generalisability of the findings. High attrition rate. Low levels of mental illness and high levels of well-being at T0, created floor and ceiling effects.

	distribution lists. Participants excluded if DASS scores were in 'severe' range (n=9).		purpose built, automated and interactive website. The 3 programmes were delivered over 3 sessions, with a recommended 1-week break between sessions, with weekly email reminders to complete the next session.					PANAS: No significant differences were found. The interaction effect between time and gp was not significant, F(8,306)= 1.09, P=.37. OTH: No significant interaction effect between time and group, F(12,304) = 1.36, P= .186.	It would be helpful to assess change over years rather than months. May have benefited from the inclusion of a measure on Psychological well-being (PWB).
Morledge et al., 2013 USA	Sample recruited via fliers, posters in clinics or by direct referral from healthcare providers.	N = 551 n/a (18-79) 11.1% male	An Internet-Based Stress Management Program (ISM). Adapted from Mindfulness Based Stress reduction (MBSR) 2 Intervention gps: 1) ISM (n= 183) 2) ISM plus online message board (ISM+) (n=184) Both were 12-week, online interventions; teaching mindfulness skills and guided meditation.	No intervention group (n=184)	PWB-SA SVS Completed at: Baseline (T0) Week 8 (T1) Week 12 (T2) Also asked to complete weekly activity log for wk 1-8.	PSS-10 ASTI SF-36	57% after T0	Both gp 1) and gp 2) showed a statistically significant difference from the control group across T0 and T1 for the PWB-SA.	Predominately female, highly-educated and only available to those with internet access; limiting generalisability of the findings. Several technical issues were highlighted. High attrition rates; consideration of a study design that would enable an intent to treat population analysis.
Neff & Germer, 2013 USA	Sample recruited from Boston area via fliers, internet and referrals from local therapist and meditation teachers.	N=54 51.21 22% male	Mindful Self-Compassion (MSC) programme. Incorporating aspects of Mindfulness Based Stress Reduction (MBSR), Mindfulness Based Cognitive Therapy (MBCT) and Compassion Focused Therapy (CFT) (n=24) Delivered in a group (8 x 2 hrs weekly), led by two Clinical Psychologists.	Waitlist control gp (n= 27)	SWLS Completed at: 2 wks pre intervention (T0) wk 3 of gp (T1) wk 6 of gp (T2) 2 wks post intervention (T3) 6 month follow up (T4) 1 yr follow up (T5)	SCS-SF CAMS-R IOE-R SCS SHS BDI STAI PSS-10	5% (3 participants were excluded from analysis)	The intervention gp demonstrated significantly greater gains in life satisfaction (SWLS). A medium ES was found, d= .51.	Predominately middle-aged, highly-educated females who had prior meditation experience; limiting generalisability of the findings.

Rasanen, Lappalainen, Muotka, Tolvanen, & Lappalainen, 2016 Finland	University students who met follow criteria: a) Students b) >18 yrs c) Access to internet d) Self-reporting as experiencing distress e) Willingness to commit to program Recruited through student mailing lists, adverts on uni website, posters.	N = 68 24.29 (19-32) 15% male	Online Acceptance and Commitment Therapy intervention (iACT) called *The Student Compass.* (n= 33) 7 wk online course, with 2 face to face meetings and personal written feedback from ACT trained student coaches.	Waiting list control (WLC) (n= 35)	MHC-SF Completed at: Pre- intervention (T0) Post-intervention (T1) 12 month follow up (T2)	PSS-10 BDI DASS-21 AAQ-II FFMQ OLQ-13	12% at T1 21% at T2	The iACT gp was superior to the WLC at T1, indicated by significant interactions on MHC-SF, showing larger increases in wellbeing. A moderate ES was found between the iACT and WLC at T1, d = .65.	Sample was predominately female. Consider additional advertising strategies to appeal to male students. Relatively small, volunteer sample, made up of participants highly motivated for change. Included a WLC but not an active comparable group. Coaches had an array of new knowledge and skills to adapt to.
Schrank et al., 2016 UK	A clinical sample of people with psychosis. Recruited from; 8 adult mental health services within South London; 2 specialised psychosis community services; 1 inpatient rehab service.	N = 94 42.5 28% male	Wellfocus Positive Psychotherapy (PPT) (n= 47) Delivered in a group (11 x 90min weekly), led by a therapist and co-therapist. Participants received a phone call between sessions to support them with hmwk and reflect on what they've learnt. There were 6 gps with an avg of 8 (4-10) participants.	Treatment as usual (TAU) (n= 47)	WEMWBS PPI MANSA Completed at: Baseline (T0) Post-intervention (T1)	SBI IHS RES RSE-S tSCS SDHS HoNOS BPRS	25% dropout after screening 10% T0 to T1	WEMWBS: Not significant F(1,81)= .8, p= .37; d= .15 MANSA: Not significant F(1,81) = 5.9, P= .02; d= .30. PPI: Significant difference found F(1,81) = 5.9, P= .02; d= .30.	Clinical diagnoses were used rather than research diagnoses. TAU as control gp rather than an active comparison group. The outcome evaluation was unblended. More exploration of gp cohesion and process may be helpful for future studies.
Seear & Vella-Brodrick, 2013 Australia	Self-selected adults who were also part of a larger well-being study. (Odou & Vella-Brodrick, 2011)	N = 211 34 (18-74) 24.6% male	A Positive Psychology Strengths based intervention (Seligman et al, 2005). 2 intervention groups:	No activity control gp (n=67)	WEMWBS PANAS Completed at: Pre- intervention (T0)	MAAS THS GQ-6 IPIP	65% From T0-T1 Further 49% from T1-T2	Gp 1) intervention did not significantly increase positive affect. WEMWBS: Significant main effect of condition was found.	Predominately female, highly-educated and only available to those with internet access; limiting generalisability of the findings.

	Recruited from general public through online discussion forums, adverts in local newspapers, posters, fliers.		1) *Best possible selves gp (BPS):* modified from Seligman et al, (2005) (n=73) 2) *Three good things gp (TGT):* based on Sheldon & Lyubomirsky (2006) (n=71)		Post-intervention (T1) 2 wk follow up (T2)			$F(2,66) = 3.64$, P= .032; will a medium ES, $\eta_p^2 = 0.099$	High attrition rates; could have been reduced by having on-going contact with the participant.
Shapiro, Brown, Thoresen, & Plante, 2011 USA	Undergraduate students were recruited via fliers, emails and class presentations.	N = 30 18.73 (18-24) 12.3% male	Mindfulness Based Stress reduction (MBSR) (n=15) 8 x 90 min, weekly gps	Waitlist control gp (n=15)	PANAS Completed at: Pre- intervention (T0) 8 wks post-intervention (T1) 12 month follow up (T2)	MAAS SCS ADHS IRI HFS	6%	From T0- T1, the intervention gp reported a larger increase in SWB ($p < .01$; $\eta_p^2 = .19$)	Small sample size limited statistical power to detect effects. All findings were based on self-reported outcomes, could have benefited from added more objective measures of MH and SWB.

Cohen d calculated as the difference between the means of the treatment and control condition divided by the standard deviation of the control condition (d= 0.2 is considered as a small effect; d=0.5 as medium; and d=0.8 as large) (Cohen, 1992).

Well-being measures: FS: Flourishing Scale, MANSA: 12 item Manchester Short Assessment, MHC-SF: Mental Health Continuum- Short Form, OTH: Orientations to Happiness and Life Satisfactions Questionnaire, PWI-A: Personal Well-being Index- Adult, PANAS: Positive and Negative Affect Scale, PPI: Positive Psychotherapy Inventory, PWB-SA: Psychological Well-being –Self-Acceptance subscale, SWLS: Satisfaction with Life Scale, SVS: Subjective vitality Scale, WEMWBS: Warwick-Edinburgh Mental Well-Being Scale.

Other outcome measures: AAQ-II: Acceptance and Action Questionnaire-II, ADHS: Adult Dispositional Hope Scale, ASTI: Adult Self-Transcendence Inventory, BDI: Beck Depression Inventory, BPRS: Brief Psychiatric Rating Scale, CAMS-R: The cognitive and Affective Mindfulness Scale; CES-D: Center for Epidemiologic Studies Depression Scale, DASS-21: Depression, Anxiety, Stress Scales, FFMQ: The Five Facet Mindfulness Questionnaire, GQ-6: The Gratitude Questionnaire, HoNOS: Health of the Nation Outcome Scale, HFS: Heartland Forgiveness Scale, IOE-R: Impact of Events scale- revised (Avoidance subscale used only), IHS: Integrative Hope Scale, IPIP: International Personality Item Pool, IRI: Interpersonal Reactivity Index, MAAS: Mindfulness Attention Awareness Scale, OLQ-13: The Orientation to Life Questionnaire, PSS-10: Perceived Stress Scale, RES: Rodgers Empowerment Scale, RSE-S: The Rosenberg Self-Esteem Scale, SF-36:36 Item Short Form Health Survey, SBI: The Savoring Beliefs Inventory, SCS: Self-compassion Scale, SDHS: The Short Depression-Happiness Scale, tSCS: The Sense of Coherence Scale, SCS: Social Connectedness Scale, STAI: State-trait Anxiety Inventory, SHS: Subjective Happiness Scale, THS: Trait Hope Scale.

3.3. Recruitment

Only one of the 11 studies did not explicitly describe recruitment procedures (Giannopoulos & Vella-Brodrick, 2011). One study consisted of a solely clinical sample recruited from Mental Health Services (Schrank et al., 2016). Two studies (Rasanen et al., 2016; Shapiro et al., 2011) recruited participants from universities. The remaining eight (Bohlmeijer et al., 2015; Fledderus et al., 2010; Morledge et al., 2013; Neff & Germer, 2013; Giannopoulos & Vella-Brodrick, 2011; Mitchell et al., 2009; Seear & Vella-Brodrick, 2013; Howells et al., 2016) recruited participants from a general online population. In addition to online recruitment, one study was also advertised within healthcare providers (Morledge et al., 2013), one accepted referrals from psychologists (Fledderus et al., 2010), and one accepted referrals from therapists more generally (Neff & Germer, 2013).

There were a range of recruitment methods used, such as: local newspapers (Bohlmeijer et al., 2015; Seear & Vella-Brodrick, 2013), press articles (Fledderus et al., 2010), posters (Fledderus et al., 2010; Morledge et al., 2013; Rasanen et al., 2016; Seear & Vella-Brodrick, 2013), fliers (Fledderus et al., 2010; Morledge et al., 2013; Neff & Germer, 2013; Rasanen et al., 2016; Seear & Vella-Brodrick, 2013; Shapiro et al., 2011), Facebook and LinkedIn (Howells et al., 2016), e-newsletters (Howells et al., 2016; Mitchell et al., 2009), websites (Mitchell et al., 2009; Neff & Germer, 2013) and online discussion forums (Seear & Vella-Brodrick, 2013).

3.4. Interventions

Table 1 provides a summary of the interventions and comparators used in all of the studies. There were five different psychological interventions evaluated in the various studies: ***Acceptance and Commitment Therapy (ACT)*** (Bohlmeijer et al., 2015; Fledderus et al., 2010; Rasanen et al., 2016); ***Positive Psychotherapy (PPT)*** [a form of Positive Psychology Interventions based on Seligman, Steen, Park & Peterson (2005)] (Giannopoulos & Vella-Brodrick, 2011; Mitchell et al., 2009; Seear & Vella-Brodrick, 2013; Schrank et al., 2016); ***Mindfulness/ Mindfulness Based Stress Reduction*** (Howells et al., 2016; Morledge et al., 2013; Neff & Germer, 2013); ***Cognitive Behavioural Therapy (CBT)*** (Mitchell et al., 2009) and ***Mindful Self-Compassion*** (Shapiro et al., 2011). Mitchell et al., 2009 was the only

study that compared two therapies, ACT and CBT. A significant difference between groups was only found in one of the SWB measures (Personal well-being Index; PWB-I). A significant difference was found across time points in the group receiving ACT only (p = .02). The CBT group showed no change over time. Both the of the studies which reported the greatest effect sizes (Bohlmeijer et al., 2015; Rasanen et al., 2016), showed that ACT was superior at improving well-being, compared to the control group.

In seven of the studies, the intervention was delivered via *online, guided self-help* materials (Bohlmeijer et al., 2015; Giannopoulos & Vella-Brodrick, 2011; Howells et al., 2016; Mitchell et al., 2009; Morledge et al., 2013; Rasanen et al., 2016; Seear & Vella-Brodrick, 2013). The remaining four were delivered in a *group* format (Fledderus et al., 2010; Neff & Germer, 2013; Schrank et al., 2016; Shapiro et al., 2011).

The most frequently used form of control group was a *'waiting list control group'* used in five studies (Bohlmeijer et al., 2015; Fledderus et al., 2010; Neff & Germer, 2013; Rasanen et al., 2016; Shapiro et al., 2011). Three of the studies provided a '*no intervention'* control group (Giannopoulos & Vella-Brodrick, 2011; Morledge et al., 2013; Seear & Vella-Brodrick, 2013). Two of the studies engaged their control group in a '*neutral task'* (Howells et al., 2016; Mitchell et al., 2009) and one of the control groups was provided with '*Treatment as usual' (TAU)* (Schrank et al., 2016).

3.5. Standardised well-being measures

The eleven studies included in this review used a range of eleven different scales to assess well-being. Authors did not usually state why they choose a specific well-being measure. Table 3 provides an overview of the different measures and the number of studies that used them within the review.

3.6. Follow up duration

All of the studies required participants to complete measures pre-intervention (baseline) and then post intervention. The times for post intervention, varied between studies, depending on the length of treatment. This

ranged from 11 days (Howells et al., 2016) to 12 weeks (Schrank et al., 2016), with the mean being 7.5 weeks. Nine of the eleven studies also carried out follow up assessments with their participants. Again there was a wide disparity in timescales, from 2 weeks post intervention (Seear & Vella-Brodrick, 2013) to 12 months' post intervention (Shapiro et al., 2011). The two studies that did not complete any follow up assessments were both solely internet based studies; who noted particularly high attrition rates (Howells et al., 2016; Morledge et al., 2013).

Table 3: Description of SWB measure

Outcome measure	Brief description	Studies (N)
Mental Health Continuum- Short Form (MHC-SF)	Three domains: Emotional well-being (happy, interested in life, satisfied), Psychological well-being and Social well-being.	**4** (Bohlmeijer et al., 2015; Fledderus et al., 2010; Giannopoulos & Vella-Brodrick, 2011; Rasanen et al., 2016)
Positive and Negative Affect Scale (PANAS)	Two mood scales: one that measures positive affect and the other which measures negative affect.	**4** (Howells et al., 2016; Mitchell et al., 2009; Seear & Vella-Brodrick, 2013; Shapiro et al., 2011)
Satisfaction with Life Scale (SWLS)	Four domains: living situation, social relationships, work, self and present life.	**3** (Howells et al., 2016; Mitchell et al., 2009; Neff & Germer, 2013)
Orientations to Happiness Questionnaire (OTH)	Three domains: Life of meaning, life of pleasure and life of engagement.	**2** (Giannopoulos & Vella-Brodrick, 2011; Mitchell et al., 2009)
Warwick-Edinburgh Mental Well-Being Scale (WEMWBS)	Fourteen items: measuring feelings and thoughts related to psychological functioning, affect and cognitive-evaluate elements.	**2** (Schrank et al., 2016; Seear & Vella-Brodrick, 2013)
Flourishing Scale (FS)	Eight domains of human functioning: positive relationships, engaged, contribution to others, feelings of competence, feeling like a good person, feeling optimistic, feeling respected, having meaning and purpose in life.	**1** (Howells et al., 2016)
Manchester Assessment of Quality of Life (MANSA)	Eight life domains: job, finances, friendships, leisure activities, accommodation, safety, physical health, mental health; plus general life satisfaction.	**1** (Schrank et al., 2016)
Personal Well-being Index- Adult (PWI-A)	Eight life domains: standard of living, health, achievement in life, personal relationships, personal relationships, personal safety, community-connectedness, future security, spirituality.	**1** (Mitchell et al., 2009)
Positive Psychotherapy Inventory (PPI)	Four domains: Pleasant life, engaged life, meaningful life, overall happiness.	**1** (Schrank et al., 2016)
Psychological Well-being (PWB)	Six domains: autonomy, environmental mastery, personal growth, positive relationships, purpose in life, self-acceptance.	**1** (Morledge et al., 2013)
Subjective vitality Scale (SVS)	Five domains: Energy, zeal, interests, purpose in life, feelings of aliveness.	**1** (Morledge et al., 2013)

3.7 Other outcome measures

From Table 2, you can see that a wide range of additional outcome measures were administered alongside measures of SWB (n= 30). Table 4 provides a breakdown of these measures. The most frequently correlated with SWB were measures of clinical symptomology such as depression and anxiety (n= 11), reported in six of the studies (Bohlmeijer et al., 2015; Howells et al., 2016; Mitchell et al., 2009; Neff & Germer, 2013; Rasanen et al., 2016; Schrank et al., 2016). One study did not include any measures other than SWB (Giannopoulos & Vella-Brodrick, 2011). The remaining four studies focused more on Mindfulness (n=5) and Positive psychology (n=7) measures (Fledderus et al., 2010; Morledge et al., 2013; Seear & Vella-Brodrick, 2013; Shapiro et al., 2011).

Table 4: Description of additional outcome measures

Outcome measure	Studies included in (N)
AAQ-II: Acceptance and Action Questionnaire	**3** (Bohlmeijer et al., 2015; Fledderus et al., 2010; Rasanen et al., 2016)
PSS-10: Perceived Stress Scale	**3** (Morledge et al., 2013; Neff & Germer, 2013; Rasanen et al., 2016)
BDI: Beck Depression Inventory	**2** (Neff & Germer, 2013; Rasanen et al., 2016)
MAAS: Mindfulness Attention Awareness Scale	**2** (Seear & Vella-Brodrick, 2013; Shapiro et al., 2011)
SCS: Self-compassion Scale	**2** (Neff & Germer, 2013; Shapiro et al., 2011)
SDHS: The Short Depression-Happiness Scale	**1** (Schrank et al., 2016;)
tSCS: The Sense of Coherence Scale	**1** Schrank et al., 2016)
CES-D: Center for Epidemiologic Studies Depression Scale	**1** (Bohlmeijer et al., 2015
DASS-21: Depression, Anxiety, Stress Scales	**1** (Rasanen et al., 2016)
ADHS: Adult Dispositional Hope Scale	**1** (Shapiro et al., 2011)
ASTI: Adult Self-Transcendence Inventory	**1** (Morledge et al., 2013
BPRS: Brief Psychiatric Rating Scale	**1** (Schrank et al., 2016)
CAMS-R: The cognitive and Affective Mindfulness Scale	**1** (Neff & Germer, 2013)
FFMQ: The Five Facet Mindfulness Questionnaire	**1** (Rasanen et al., 2016)
GQ-6: The Gratitude Questionnaire	**1**

	(Seear & Vella-Brodrick, 2013)
HoNOS: Health of the Nation Outcome Scale	**1** (Schrank et al., 2016)
HFS: Heartland Forgiveness Scale	**1** (Shapiro et al., 2011)
IOE-R: Impact of Events scale- revised (Avoidance subscale only)	**1** (Neff & Germer, 2013)
IHS: Integrative Hope Scale	**1** (Schrank et al., 2016)
IPIP: International Personality Item Pool	**1** (Seear & Vella-Brodrick, 2013)
IRI: Interpersonal Reactivity Index	**1** (Shapiro et al., 2011)
OLQ-13: The Orientation to Life Questionnaire	**1** (Rasanen et al., 2016)
RES: Rodgers Empowerment Scale	**1** (Schrank et al., 2016)
RSE-S: The Rosenberg Self-Esteem Scale	**1** (Schrank et al., 2016)
SF-36: RAND36 Item Short Form Health Survey	**1** (Morledge et al., 2013
SBI: The Savoring Beliefs Inventory	**1** (Schrank et al., 2016)
STAI: State-trait Anxiety Inventory	**1** (Neff & Germer, 2013)
SHS: Subjective Happiness Scale	**1** (Neff & Germer, 2013)
THS: Trait Hope Scale	**1** (Seear & Vella-Brodrick, 2013)
SCS: Social Connectedness Scale	**1** (Neff & Germer, 2013)

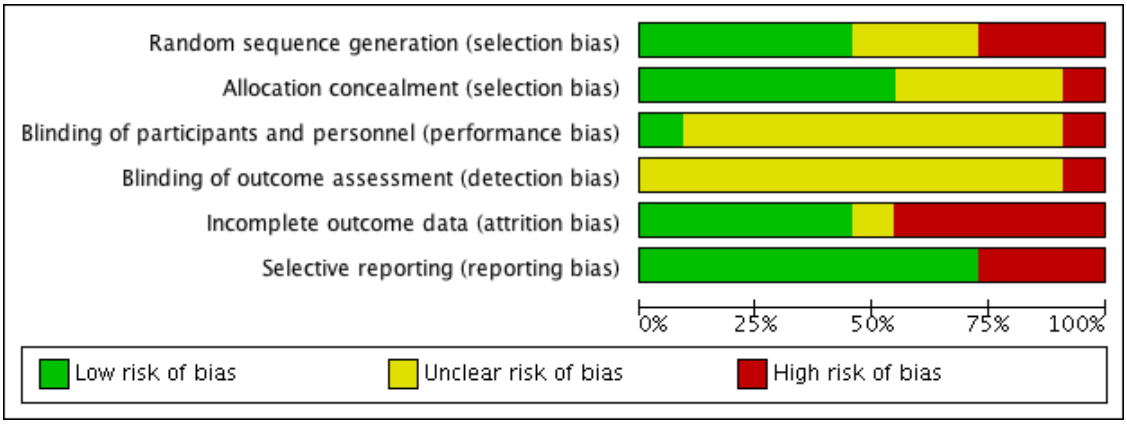
3.8 Limitations

Reported limitations are included in Figure 1. The most frequently reported limitation across the studies was the biased sample, consisting of predominately middle-aged, well-educated, females (Bohlmeijer et al., 2015; Giannopoulos & Vella-Brodrick, 2011; Howells et al., 2016; Mitchell et al., 2009; Morledge et al., 2013; Rasanen et al., 2016; Seear & Vella-Brodrick, 2013). Also noted was: small sample size (Fledderus et al., 2010; Mitchell et al., 2009; Rasanen et al., 2016; Shapiro et al., 2011) and high attrition rate (Mitchell et al., 2009; Morledge et al., 2013; Seear & Vella-Brodrick, 2013).

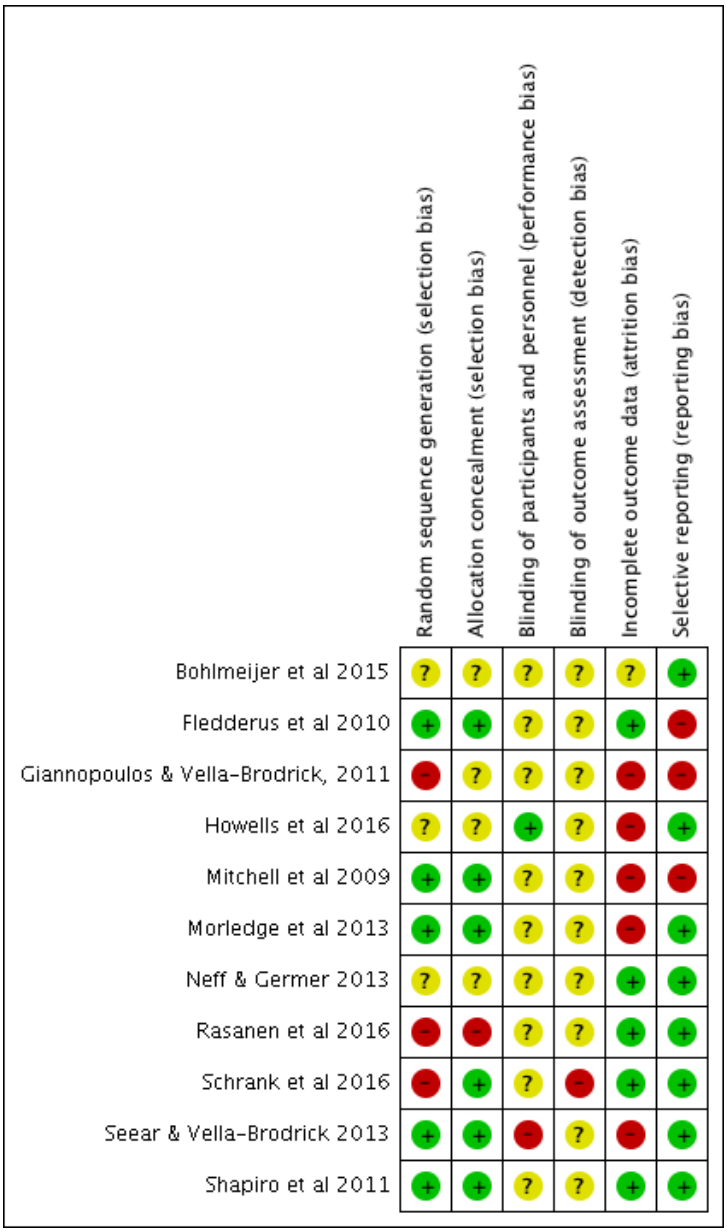
3.9 Assessing Risk of Bias

The author and an additional doctoral researcher independently screened a sample of studies for risk of bias utilising the Cochrane Risk of bias tool. Agreement between raters reached 94%. Disagreement was resolved through discussion and 100% agreement was reached. See Graph 1 and Graph 2 for Risk of Bias summary and graphical representation.

Graph 1: Risk of Bias Graph



Graph 2: Summary of assigned 'risk of bias' categories



SELECTION BIAS: *Biased allocation to interventions*

- **Random sequence generation and Allocation concealment**

Five of the eleven studies described using a computer generated random sequence of number allocation, therefore meeting criteria for a 'low risk' of bias across both sequence generation and concealment (Fledderus et al., 2010; Mitchell et al., 2009; Morledge et al., 2013; Seear & Vella-Brodrick, 2013; Shapiro et al., 2011). Four of the studies did not provide adequate information regarding the process of randomisation or allocation concealment (Bohlmeijer et al., 2015; Giannopoulos & Vella-Brodrick, 2011; Howells et al., 2016; Neff & Germer, 2013). Schrank et al. (2016) and Rasanen et al. (2016) indicated that randomisation was conducted by judgement of independent researcher, leading to a 'high risk' of bias for sequence generation. However, as these allocations were completed independently of the research team, participants and investigators could not foresee assignment and so this met criteria for a 'low risk' of bias for concealment.

PERFORMANCE BIAS: *Bias due to knowledge of the allocated interventions by participants and personnel during the study.*

- **Blinding of participants and personnel**

Nine of the included studies did not address this issue and it was therefore rated as being at 'unclear risk' of bias. Of the two studies that discussed efforts to blind participants, one was successfully able to blind participants from knowing what group they had been assigned to (Howells et al., 2016). The participants were aware that they were taking part in a wellbeing study but were randomly allocated to either the intervention group (a mindfulness app) or the control group (a list making app- neutral task). Seear & Vella-Brodrick (2013) only revealed the allocation of intervention after baseline measures had been completed.

DETECTION BIAS: *Bias due to knowledge of the allocated interventions by outcome assessors.*

- **Blinding of outcome assessment**

Schrank et al. (2016) explicitly stated that they were unable to keep the outcome assessors blinded to the allocated intervention, resulting in a 'high risk' of bias. The remaining eleven studies made no reference to the blinding of outcome assessors and were rated as being at 'unclear risk' of bias.

ATTRITION BIAS*: Bias due to amount, nature or handling of incomplete outcome data.*

- **Incomplete outcome data**

The majority of the studies assessed change over 3 time points, usually pre-intervention, post-intervention and then ranging from 2 weeks – 12 month follow up (Bohlmeijer et al., 2015; Giannopoulos & Vella-Brodrick, 2011; Mitchell et al., 2009; Morledge et al., 2013; Rasanen et al., 2016; Seear & Vella-Brodrick, 2013). The remaining studies completed the assessment measures, pre and post intervention (Howells et al., 2016; Schrank et al., 2016) and at 6 different time points (Neff & Germer, 2013).

Attrition rates ranged from 3% (Neff & Germer, 2013) to 69% post intervention and up to 83% at 3 month follow up (Mitchell et al., 2009). Bohlmeijer et al., (2015) do not address this outcome at all and so was rated as being at 'unclear risk'. Five studies noted that their attrition data was low (Fledderus et al., 2010; Neff & Germer, 2013; Rasanen et al., 2016; Schrank et al., 2016; Shapiro et al., 2011) with numbers balanced across the groups and using Intention to Treat anaylsis; therefore these studies meet criteria for 'low risk' of bias. The remaining studies (Giannopoulos & Vella-Brodrick, 2011; Mitchell et al., 2009; Morledge et al., 2013; Seear & Vella-Brodrick, 2013) clearly addressed the high attrition rate and sought to document the impact of this missing data on effect sizes. These studies met criteria for 'high risk' of bias. Six of the studies explicitly recorded reasons for drop outs, including: technical and online-access trouble (Morledge et al., 2013; Giannopoulos & Vella-Brodrick, 2011); busy schedule (Morledge et al., 2013; Rasanen et al., 2016; Schrank et al., 2016; Shapiro et al., 2011); work/family constraints (Neff & Germer, 2013; Schrank et al., 2016) and 'feeling better' (Rasanen et al., 2016).

REPORTING BIAS: *Bias due to selective outcome reporting.*

- **Selective reporting**

Only two of the studies made reference to a protocol (Schrank et al., 2016; Rasanen et al., 2016). However, six studies met criteria for 'low risk' of bias, as although the protocol wasn't available, the reports appear to address all expected outcomes specified within the aim and hypotheses (Bohlmeijer et al., 2015;

Howells et al., 2016; Morledge et al., 2013; Neff & Germer, 2013; Seear & Vella-Brodrick, 2013; Shapiro et al., 2011).

Fledderus et al., (2010) and Giannopoulos & Vella-Brodrick (2011), met criteria for 'high risk' of bias as they failed to report all pre-specified primary outcomes. Mitchell et al. (2009) also conducted some post-hoc analysis that was non-specified.

4. DISCUSSION

This review aimed to systematically appraise studies that had employed randomised controlled trials to evaluate psychological interventions aimed at improving subjective well-being (SWB). Along with determining what types of interventions had been evaluated and what assessment measures had been employed. Furthermore, the review sought to assess the risk of bias in these studies and make recommendations, which may increase methodological rigor for future research in this area.

The review indicated that PPI, ACT and Mindfulness interventions were the most commonly evaluated psychological therapies for improving SWB. Within this small sample, ACT was shown to be the most effective at improving well-being. Over 60% of the studies were conducted online and all of the four studies that involved face-to-face therapy were carried out within a group context. This is in line with Gellatly et al. (2007) meta-analysis of RCT's of psychological interventions to improve depression, which noted a rise in guided self-help, online delivery and therapy groups as a way to increase access to psychological therapies. In particular, the online delivery of interventions has been heralded as a low cost way to recruit efficiently large and diverse samples for evaluating the efficacy of interventions (Kraut et al., 2004). However, a downside of this is the increased likelihood of attrition. Evidence has shown that high drop-out rates are expected with online studies and that drop-out rates can be up to 50% higher in group therapy interventions over individual therapy (Melville, Casey & Kavanagh, 2010, Hans & Hiller, 2013, Sundquis et al., 2015). A number of the studies explicitly stated ways in which they attempted to decrease attrition. Methods included; email reminders (Howells et al., 2016; Morledge et al., 2013), telephone

calls (Mitchell et al., 2009; Rasanen et al., 2016); website prompts (Mitchell et al., 2009) and monetary incentives (Shapiro et al., 2011). Although the intervention was delivered online, Rasanen et al., (2016) reported a lower than expected drop-out rate of 9% (n = 3). They contributed this to greater engagement with the participant through offering face-to-face weekly support, along with tailored weekly contact online, where 'coaches' would provide written feedback to participants.

In terms of the different types of standardised measures that were employed in the studies, a total of 11 different measures of SWB were used. Consistent with Jovanovic's (2015) claim, the current review indicated that the PANAS and SWLS were the most prominent measures of wellbeing, whilst also highlighting the growing use of the MHC-SF, which has received much more interest in the past 5 years due to the development of Keyes et al., (2008) work on flourishing. Only one of the studies (Giannopoulos & Vella, 2011), measured SWB as the only outcome variable. All of the data was based on self-reported, psychometric measures of SWB and none of the studies employed multimodal methods to assess global functioning, as recommended (Diener, 1984; McDonald, 2008). All of the remaining studies were also interested in measuring other variables such as the presence of mental health symptoms. These assessment measures are from what Keyes (2002) refers to as the 'clinical tradition' and were focused on symptoms of anxiety, depression, self-esteem and stress.

Finally, this review was specifically focusing on the risk of bias inherent in the methodology of each included study. Therefore, the Cochrane 'Risk of Bias' Tool, as recommended by PRISMA was used (Higgins & Green, 2011). The methodological quality of the 11 studies was variable. Three of the studies (27%), (Bohlmeijer et al., 2015; Neff & Germer, 2013; Shapiro et al., 2011) did not meet the criteria for a high bias in any of the 6 items, however that was due to some information not being available and an 'unclear' label being given instead. Seear & Vella-Brodrick (2013), the only study to which a definitive judgment could be made about risk of bias for each of the risk of bias criteria, had clearly documented its procedures well and was transparent in its reporting.

Across the eleven studies the percentage assigned to each criteria was as follows: 'unclear risk of bias' (41%; n = 27), 'low risk of bias' (38%; n= 25) and 'high risk of bias' (21%; n = 14).

The selection bias for studies included in this review was surprisingly high considering they were all RCT's, the gold standard of research. Many of the studies did not address their methods of randomisation and for the majority that did; this was done in a non-standardised way. The proportion of studies demonstrating high risk of bias was lowest for allocation concealment (9%). Blinding of participants and outcome assessment was poor throughout all of the studies. There was a high risk of attrition bias across the studies and the authors did not always consider or document reasons why the dropout rate was so high. Intention to treat analysis was considered in some of the studies but overall attrition was the domain that received the highest risk of bias (45%). Reporting bias was also poorly defined with only two studies (Schrank et al., 2016; Rasanen et al., 2016) making actual reference to their study protocol. Sources of bias need to be considered as they can have important implications for the internal validity of a study and the extent to which the research questions have been appropriately addressed (Pannucci & Wilkins, 2010). The Cochrane Risk of Bias tool was designed as a new strategy for assessing the quality of randomised trials (Higgins & Green, 2011). As it is based on narrative descriptions of evidence-based methodological features, it would be a helpful tool for future researchers to be aware of when designing RCTs and could provide a helpful framework to work from.

4.1 Limitations

When evaluating the quality of the included studies, the most prominent methodological problems that were identified were related to the sample characteristics and the generalisation to the wider population. The main demographic of those participating within the studies were middle-aged, educated, employed females, providing quite a substantial bias. Interestingly, research has shown that this is a potentially valuable population in which to undertake well-being research. In a study by Inglehart (2002), woman aged 46 years and older, were identified as having particularly low levels of SWB

compared to both men of similar age and younger woman. However, it is important for samples to be balanced across gender in order to increase generalisability. Therefore, the lack of male samples highlights the need for further research.

Many studies also had modest sample sizes and high attrition rates, meaning they tended to be underpowered to detect between group differences. It is also important to note that while all the data collected were longitudinal, the lengths of follow up times were relatively short, which can place limits on the conclusions that can be drawn about the longer term impact of the interventions on SWB.

Although there were no date restrictions placed on the search criteria, the included studies in this review all fell within a relatively short time frame; with the first being published in 2009 and three of the studies being published this year. This may be expected due to the factors stated earlier regarding the increased interest in improving wellbeing and positive psychology interventions (Boiler et al., 2013; Seligman et al., 2005; Sin and Lyubomirsky (2009).

As stated earlier, demand is growing for the development and publication of new measures of SWB. However, in this review the decision was made to only include studies that had administered standardised measures of SWB. In addition to the list within Schrank et al., (2013), a search was completed to make sure all included measures had published a validation or reliability study which investigated the psychometric properties of the measure.

An important limitation is that this review specifically focused on the methodological rigor of the studies rather than providing a full critique of the efficacy of interventions or well-being measures. A further review could specifically focus on correlations between the mental health measures and measures of SWB, across different time points. This would help assess further the validity of SWB measures within a clinical psychopathology population.

4.2 Clinical Implications

The majority of recruited participants came from a convenience/ general population sample; therefore, it would be helpful for further studies to be completed within a clinical population to ascertain whether there is received benefit from the psychological interventions in these populations. The current review highlighted the increasing move towards third wave cognitive behavioural therapies and Positive Psychology therapies and the potential that these interventions have for improving SWB. The Psychological Matrix is a policy document developed in partnership with the Scottish Executive and NHS Education for Scotland. It documents the most effective, evidenced based psychological treatments for a range of patient populations. It provides suggestions for ways to increase access to psychological therapies, including using more low interventions such as self-help, computerised CBT and group therapy. Currently, these are all within the Cognitive Behavioural tradition and Mindfulness is the only third wave therapy that has sufficient evidence base to be included in the most current version (The Scottish Executive, 2015). The NICE Guidelines' most recent review (2011) of the psychological treatment of depression and anxiety disorders also indicates CBT as the treatment of choice with the greatest evidence base. Given the rise in popularity of these third wave therapies and their spread across UK mental health services, it is of central importance to conduct further studies to determine their efficacy and strengthen their evidence base (Hunot et al., 2013; Ost, 2014).

4.3 Critique of Methodology

Conducting this review has provided opportunities to critically reflect on the methodology and search strategies that were employed. As stated within the introduction, 'well-being' is a vast subject area and can be conceptualised in many different ways. For the purpose of this review we therefore tried to define well-being solely using the term "subjective well-being" and particular derivatives of that including "emotional well-being", "psychological well-being", "social well-being", "inner well-being" and "positive well-being". However, it appears that limiting our search criteria by just including these well-being concepts, led to the exclusion of many other potentially appropriate studies. A meta-analysis completed by Sin & Lyubomirsky in 2009 reviewed over 49 RCT's completed

within Positive Psychology research alone on improving well-being. Whilst many of these RCT's would have not met the eligibility criteria for the current systematic review, it does highlight potential limitations with regard to mechanical electronic searches in this particular field of research. On hindsight it would have been advantageous to hand search two of the main Positive Psychology journals i.e. *The Journal of Positive Psychology* and *The Journal of Happiness.* Searching these journals in more depth, and adapting the search criteria to be more inclusive of the positive psychology literature, would have resulted in a larger body of studies to potentially include in the review.

Following further exploration of this field, it is important to give an overview of the following key literature, which will help expand our understanding of this area. First, *positive psychology interventions* (PPIs) have been extensively researched and reviewed to show their benefits at improving well-being. Lyubomirsky, Sheldon and Schkade (2005) suggest that a substantial proportion of happiness may be under the individual's control through intentional activities. Therefore, a range of happiness-increasing strategies and activities have been researched. Sin & Lyubomirsky's (2009) meta-analytic review indicated activities such as, counting ones blessings (Lyubomirsky et al., 2005), engaging in enjoyable activities (Fordyce, 1977), performing acts of kindness (Lyubomirsky et al., 2005), using one's strengths in a new way (Seligman et al., 2005), writing letters of gratitude (Boehm, Lyumbomirsky & Sheldon, 2011) and writing about 'one's best possible self' (Sheldon & Lyubomirsky, 2006) all significantly enhanced well-being, as measured by pre and post well-being measures.

Macleod, Coates and Hetherton (2008) also introduced a new intervention called Goal setting and planning (GAP), which focused on teaching goal setting and planning skills to people in group settings and remotely through manuals and telephone contact. The goal was to increase subjective well-being in individuals with a wide range of starting points, rather than just targeting those with low well-being. As defined by Salama-Younes (2011 p226), subjective well-being is the presence of high positive affect (PA), the absence of negative affect (NA) and high levels of life satisfaction. Results found that those participating in the group GAP,

indicated a significant increase in life satisfaction relative to controls. Whereas those receiving individual GAP, showed a significant increase in PA, life satisfaction and a significant reduction in NA. The authors stated these results suggest a causal link between goal setting and planning skills to well-being, suggesting that training individuals in goal and planning skills can enhance their well-being. Having goals for the future and being able to make progress towards them using the GAP intervention, has also been shown to have positive results within people with depression (Coote & MacLeod, 2012) and those with psychiatric disorders (Farquharson & MacLeod, 2014). These finding support the value of using interventions that are not solely focused on symptom reduction but rather on enhancing positive aspects of people's experience.

5 CONCLUSION AND RECOMMENDATIONS

This systematic review sought to provide an overview of the literature relating to RCTs that have evaluated psychological interventions aimed at improving SWB. It highlighted the key standardised measures of SWB that have been used to date and sought to emphasis the move towards newer third wave therapies and positive psychology interventions, which have been shown to be effective at improving SWB. The review also identified potential sources of bias in the research that has been conducted to date. However, as stated in the critique of methodology section (4.3), this review did not fully capture all the most up to date published research within this vast area. Risk of bias was only carried out a small subset of the research and therefore future reviews should seek to be more inclusion of the wide range of PPI and the potential source of bias that may occur within these studies.

There is also scope for future studies to look in greater detail at the constituent components of well-being and to establish the associations between well-being and other concepts such as compassion, happiness and resilience. It would also be interesting to explore further the causality between clinical symptomology and wellbeing. Therefore, more research is required that recruit's participants with moderate to severe levels of mental health problems (See pilot study by Ferguson, Conway, Endersby and Macleod, 2009). A meta-analytic

approach would allow for more definite conclusions to be made regarding the strength of evidence for the interventions.

REFERENCES

Boeh, J. K., Lyubomirsky, S., & Sheldon, K. M. (2011). A longitudinal experimental study comparing the effectiveness of happiness-enhancing strategies in Anglo Americans and Asian Americans. *Cognitive and Emotion, 25,* 1152-1167.

Bohlmeijer, E. T., Lamers, S. M. A., & Fledderus, M. (2015). Flourishing in people with depressive symptomatology increases with Acceptance and Commitment Therapy. Post-hoc analyses of a randomized controlled trial. *Behaviour Research and Therapy*, *65*, 101–106.

Boiler, L., Haverman, M., Westerhof, G.J., Riper, H., Smit, F., & Bohlmeijer (2013). Psychology interventions: a meta-analysis of randomized controlled studies. BMC Public Health.13, 119.

Centre for Reviews and Dissemination (2009). Systematic reviews: CRD's guidance for undertaking reviews in health care. 3rd edn. New York: University of York.

Ciarrochi, J., Kashdan, T. B., & Harris, R. (2013). The Foundations of Flourishing. In T. B, Kashdan & J. Ciarrochi (Eds.), Mindfulness, acceptance and positive psychology (pp 1-29). Oakland: Context Press.

Coote, H. M. J., & MacLeod, A. K. (2012). A self-help, positive goal-focused intervention to increase well-being in people with depression. *Clinical Psychology and Psychotherapy, 19*, 305-315.

Diener, E. (1984). Subjective well-being. Psychological Bulletin, 95,542-575.

Diener, E., Emmons, R. A., Larsen, R. J., & Griffen, S. (1985). The satisfaction with life scale. *Journal of Personality Assessment,* 49, 71-75.

Diener, E., Oishi, S., & Lucas,R. E. (2002). Subjective well-being: The science of happiness and life satisfaction. In C.R. Snyder & S.J. Lopez (Ed.), *Handbook of Positive Psychology*. Oxford and New York : Oxford University Press.

Farquharson, L., & MacLeod, A. K. (2014). A brief goal-setting and planning intervention to improve well-being for people with psychiatric disorders. *Psychotherapy and Psychosomatics, 83*, 122-124.

Ferguson, G., Conway, C., Endersby, L., & Macleod, A. K. (2009). Increasing subjective well-being in long-term forensic rehabilitation: evaluation of well-being therapy. *The Journal of Forensic Psychiatry & Psychology, 20(6),* 906-918.

Fledderus, M., Bohlmeijer, E.T., Smit, F., & Westerhof, G.J. (2010). Mental Health Promotion as a New Goal in Public Mental Health Care: A Randomised Controlled Trial of an Intervention Enhancing Psychological Flexibility. *American Journal of Public Health,* 100(12), 2372-2378.

Fordyce, M. W. (1977). Development of a program to increase personal happiness. *Journal of Counselling Psychology, 24,* 511-521.

Gable, S.L., & Haidt, J. (2005). What (and Why) Is Positive Psychology? *Review of General Psychology,* 9 (2), 103–110

Gellatly, J., Bower, P., Hennessy, S., Richards, D., Gilbody, S., & Lovwll, K. (2007). What makes self-help interventions effective in the management of depressive symptoms? Meta-analysis and meta-regression. *Psychological Medicine,* 37(9), 1217-1228.

Giannopoulos, V. L., & Vella-Brodrick, D. a. (2011). Effects of positive interventions and orientations to happiness on subjective well-being. *The Journal of Positive Psychology*, *6*(2), 95–105.

Hans, E., & Hiller, W. (2013). Effectiveness of and Dropout From Outpatient Cognitive Behavioral Therapy for Adult Unipolar Depression: A Meta-

Analysis of Nonrandomized Effectiveness Studies. *Journal of Consulting and Clinical Psychology,* 81(1), 75–88.

Higgins, J.P.T., & Green, S. (Eds). *Cochrane Handbook for Systematic Reviews of Interventions* Version 5.1.0 [updated March 2011]. The Cochrane Collaboration, 2011. Retrieved May, 1, 2016 from http://www.handbook.cochrane.org.

Hone, L. C., Jarden, A., Schofield, G. M., & Duncan, S. (2014). Measuring flourishing: The impact of operational definitions on the prevalence of high levels of wellbeing. *International Journal of Wellbeing*, 4(1), 62-90.

Howells, A., Ivtzan, I., & Eiroa-Orosa, F. (2016). Putting the "app" in Happiness: A Randomised Controlled Trial of a Smartphone-Based Mindfulness Intervention to Enhance Wellbeing. *Journal of Happiness Studies*, *17*(1), 163–185.

Hunot, V., Moore, T.H.M., Caldwell, D.M., Furukawa, T.A., Davies, P., Jones, H., …Churchill, R. (2013). 'Third wave' cognitive and behavioural therapies versus other psychological therapies for depression. *Cochrane Database of Systematic Reviews*, Issue 10.

Inglehart, R. (2002). Gender aging and subjective well-being. *International Journal of Comparative Sociology,* 43, 391-408.

Jovanovic, V. (2015). Structural validity of the Mental Health Continuum-Short Form: The bifactor model of emotional, social and psychological well-being*. Personality and Individual Differences, 75, 154-159.*

Keyes, C. L. M. (2002). The mental health continuum: From languishing to flourishing in life. *Journal of Health and Social Research, 43*, 207-222.

Keyes, C.L.M. (2007). Promoting and protecting mental health as flourishing: a complementary strategy for improving National Mental Health. *American Psychologist.* 62, 95–108.

Keyes, C. L. M., Wissing, M., Potgieter, J., Temane, M., Kruger, A., & van Rooy, S. (2008). Evaluation of the Mental Health Continuum- short form (MHC-SF) in Setswana-speaking South Africians. *Clinical Psychology and Psychotherapy,* 15, 181-192.

Kraut, R., Olson, J., Banaji, M., Bruckman, A., Cohen, J., & Couper, A. (2004). 'Psychological research online: Report of Board of Scientific Affairs' Advisory group on the Conduct of Research on the Internet.' *American Psychologist,* 59, 105-117.

Lamers, S. M. A., Boiler, L., Westerhof, G. J., Smit, F., & Bohlmeijer, E. (2011). The impact of emotional well-being on long-term recovery and survival in physical illness: A meta-analysis. *Journal of Behavioral Medicine,* 35, 538-547.

Larsen, R. J., & Prizmic, Z. (2008). Regulation of emotional well-being: Overcoming the hedonic treadmill. In M. Eid & R. J. Larsen (Eds.), *The science of subjective well-being* (pp. 259–289). New York: Guilford.

Liberati, A., Altman, D. G., Tetzlaff, J., Mulrow, C., Gøtzsche, P. C., Ioannidis, J. P. A., … Moher, D. (2009). The PRISMA Statement for Reporting Systematic Reviews and Meta-Analyses of Studies That Evaluate Health Care Interventions: Explanation and Elaboration. PLoS Med 6(7): e1000100

Lyubomirsky, S., Sheldon, K. M., & Schkade, D. (2005). Pursuing Happiness: The architecture of sustainable change. *Review of General Psychology, 9,* 111-131.

Macleod, A. K., Coates, E., & Hetherton, J. (2008). Increasing well-being through teaching goal-setting and planning skills: results of a brief intervention. *Journal of Happiness Studies, 9,* 185-196.

Maslow, A. H. (1968). Toward a psychology of being (2nd Ed.) New York: Van Nostrand.

McDonald, J. (2008). Measuring Personality Constructs: The advantages and disadvantages of self-reports, informant reports and behavioural assessments. *ENQUIRE,* 1(1), 1-18.

Melville, K. M., Casey, L. M., & Kavanagh, D. J. (2010). Dropout from Internet- based treatment for psychological disorders. *British Journal of Clinical Psychology,* 49(4), 455-471.

Mitchell, J., Stanimirovic, R., Klein, B., & Vella-Brodrick, D. (2009). A randomised controlled trial of a self-guided internet intervention promoting well-being. *Computers in Human Behavior*, *25*(3), 749–760.

Morledge, T. J., Allexandre, D., Fox, E., Fu, A. Z., Higashi, M. K., Kruzikas, D. T., … Reese, P. R. (2013). Feasibility of an online mindfulness program for stress management—A randomized, controlled trial. *Annals of Behavioral Medicine*, *46*(2), 137–148.

Neff, K. D., & Germer, C. K. (2013). A Pilot Study and Randomized Controlled Trial of the Mindful Self-Compassion Program. *Journal of Clinical Psychology*, *69*(1), 28–44.

Ost, L-G. (2014). The efficacy of Acceptance and Commitment Therapy: An updated systematic review and meta-analysis. *Behaviour Research and Therapy,* 61,105-121.

Pannucci, C. J. & Wilkins, E.G. (2010). Identifying and Avoiding Bias in Research. *Plastic and Reconstructive Surgery.* 126(2), 619-625.

Parloff, M. B., Kelman, H. C., & Frank, J. D. (1954). Comfort, effective-ness, and self-awareness as criteria of improvement in psychotherapy. *American Journal of Psychiatry, 11*,343-351.

Rasanen, P., Lappalainen, P., Muotka, J., Tolvanen, A., & Lappalainen, R. (2016). An

online guided ACT intervention for enhancing the psychological wellbeing of university students: A randomized controlled clinical trial. *Behaviour Research and Therapy*, *78*, 30–42.

Rogers, C. R. (1961). On becoming a person. Boston: Houghton Mifflin.

Ryff, C.D. & Keyes, C.L.M. (1995). The structure of psychological well-being revisited. *Journal of Personality and Social Psychology, 69,* 719-727.

Ryff, C. D., & Singer, B. H. (1996). Psychological well-being: meaning, measurement, and implications for psychotherapy research. *Psychotherapy and Psychosomatics, 65*, 14-23.

Salama-Younes, M. (2011). Validation of the Mental Health Continuum Short Form and Subjective Vitality Scale with Egyptian adolescent athletes. In I. Brdar (Ed.), *The human pursuit of well-being* (pp. 221-234): Springer Netherlands.

Schrank, B., Bird, V., Tylee, A., Coggins, T., Rashid, T., & Slade, M. (2013). Conceptualising and measuring the well-being of people with psychosis: Systematic review and narrative synthesis. *Social Science & Medicine, 92,* 9-21.

Schrank, B., Riches, S., Coggins, T., Rashid, T., Tylee, A., & Slade, M. (2016). Evaluation of a positive psychotherapy group intervention for people with psychosis: pilot randomised controlled trial. *Epidemiology and Psychiatric Sciences*, *25(3)*, 235–246.

Schwarz, N., & Strack, F. (1999). Reports of subjective well-being: judgmental processes and their methodological implications. In D. Kahneman, & E. Diener (Eds.), *Well-Being: The Foundations of Hedonic Psychology* (pp. 61–84). New York: Russell Sage Found.

Seear, K. H., & Vella-Brodrick, D. A. (2013). Efficacy of positive psychology

interventions to increase well-being: Examining the role of dispositional mindfulness. *Social Indicators Research*, *114*(3), 1125–1141.

Seligman, M. E. P. (2001). *Flourish*. New York: Free Press.

Seligman, M. E. P., Steen, T. A., Park, N., & Peterson, C. (2005). Positive psychology progress: Empirical validation of interventions. *American Psychologist,* 60(5), 410-421.

Shapiro, S. L., Brown, K. W., Thoresen, C., & Plante, T. G. (2011). The moderation of Mindfulness-based stress reduction effects by trait mindfulness: Results from a randomized controlled trial. *Journal of Clinical Psychology*, *67*(3), 267–277.

Sheldon, K. M., & Lyubomirsky, S. (2006). How to increase and sustain positive emotion: The effects of expressing gratitude and visualising best possible selves. *The Journal of Positive Psychology, 1*, 73-82.

Sin, N.L., & Lyubomirsky, S. (2009). Enhancing Well-Being and Alleviating Depressive Symptoms with Positive Psychology Interventions: A Practice Friendly Meta-Analysis. *Journal of Clinical Psychology,* 65(5), 467-487.

Slade. M. (2010). Mental Illness and well-being: the central importance of positive psychology and recovery approaches. *BMC Health Services Research,10(1),* 26.

Sundquist, J., Palmér, A. K., Memon, A. A., Wang, X., Johansson, L.M., & Sundquist, K. (2015). Mindfulness group therapy in primary care patients with depression, anxiety and stress and adjustment disorders: randomised controlled trial. *The British Journal of Psychiatry*, 206 (2), 128-135.

The Scottish Executive (2015). *The Matrix: A Guide to Delivering Evidence-Based Psychological Therapies in Scotland*. NHS Education for Scotland.

Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANDAS Scales. *Journal of Pesonality and Social Psychology,* 47, 1063-1070.

WHO (2004): Promoting mental health: Concepts, emerging evidence, practice (summary report). Geneva: World Health Organization.

Wood, A. M., & Joseph, S. (2010). The absence of positive psychological (eudemonic) well-being as a risk factor for depression: A ten-year cohort study. *Journal of Affective Disorders, 122*, 213-217.

White, R.G., Imperiale, M.G., Perera, E. (2016). The Capabilities Approach: Fostering Contexts for Enhancing Mental Health and Wellbeing across the Globe. Globalization and Health, 12, 6.

CHAPTER 2: MAJOR RESEARCH PROJECT

Validation of the Flexibility of Responses to Self-Critical Thoughts Scale (FoReST) in a clinical population.

Judith McCluskey[1]

[1] Institute of Mental Health and Wellbeing

Address for correspondence:

Institute of Mental Health and Wellbeing
Gartnavel Royal Hospital,
1st Floor, Admin Building,
University of Glasgow,
Glasgow
G12 0XH

E.mail: judith.mccluskey@ggc.scot.nhs.uk

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Plain English Summary

Title: Validation of the Flexibility of Responses to Self-Critical Thoughts Scale (FoReST) within a clinical population.

Background: The Flexibility of Responses to Self-Critical Thoughts Scale (FoReST) is a questionnaire that was developed to assess whether people can be psychologically flexible when experiencing critical thoughts about themselves. This measure could have important application for evaluating processes of change in third wave therapies such as Acceptance and Commitment Therapy (ACT) and Compassion Focused therapy (CFT). This study investigated construct validity, internal consistency and the factor structure of the FoReST in a sample of people experiencing mental health difficulties.

Methods: A sample of 132 adults attending Primary Care and Community Mental Health teams across Glasgow and Lanarkshire, consented to take part in this study. They completed the FoReST and a range of other measures of psychological flexibility, self-compassion and mental health and well-being.

Main Findings and Conclusions: Exploratory factor analysis found a two-factor model for the FoReST, measuring two specific aspects: *unworkable action* and *experiential avoidance*. Results were consistent with those found in a previous investigation of the properties of the assessment measure in a non-clinical sample, and provide further support for the validity and potential utility of the measure. The FoReST may be a helpful assessment to use within ACT and CFT to measure changes in psychological flexibility of self-critical thoughts over the course of therapy. Further research will need to be completed to evaluate the test-retest reliability of the FoReST in a clinical population.

1. SCIENTIFIC ABSTRACT

Background: The Flexibility of Responses to Self-Critical Thoughts Scale (FoReST) is a questionnaire that was developed to assess whether people can be psychologically flexible when experiencing critical thoughts about themselves. This measure could have important application for evaluating third wave therapies such as Acceptance and Commitment Therapy (ACT) and Compassion Focused therapy (CFT). This study investigated the validity (concurrent, predictive and incremental), internal consistency and factor structure of the FoReST in a sample of people experiencing mental health difficulties.

Method: A total of 132 individuals attending Primary Care and Community Mental Health Teams within NHS Greater Glasgow and Clyde (NHS GGC) and Psychological Therapy Teams within NHS Lanarkshire participated in this study. Participants completed a battery of assessments that included the FoReST and related measures of similar constructs (psychological flexibility, self-compassion and self-criticism) and measures of mental health and well-being. A cross-sectional correlational design was used.

Results: An Exploratory factor analysis described an interpretable 2-factor structure within the items of the FoReST: *unworkable action* and *experiential avoidance*. The FoReST demonstrated good internal consistency (α = .89). Concurrent validity was supported through moderate to strong correlations with similar measures and moderate correlations with other mental health and well-being outcomes.

Conclusions: The FoReST appears to be a valid assessment measure for using with individuals experiencing mental health difficulties. This new measure will be of use for practitioners using ACT, CFT and those integrating both, to help monitor the process of change in flexibility and self-critical thinking across therapy. Further longitudinal studies are required to assess the test-retest reliability of the FoReST.

Key words: Acceptance and Commitment Therapy; Compassion Focused Therapy; Psychological Flexibility; Measurement; Questionnaires.

2. INTRODUCTION

Within Acceptance and Commitment Therapy (ACT), Psychological flexibility (PF) is defined as a complex, psychological construct, which incorporates emotional, cognitive, and behavioural aspects. It can be described as "the ability to be in the present moment with full awareness and openness to experiences and to take guided action towards personally held values" (Harris, 2009, p 12). This means holding our own thoughts and emotions more loosely and focusing on longer-term values rather than short-term impulses, thoughts, and feelings. On the other hand, psychological inflexibility is in direct opposition to this and is displayed when one fails to engage in values-based actions and seeks to control and suppress one's difficult internal experiences, such as thoughts, feelings, and bodily sensations. Evidence suggests that an unwillingness to stay in contact with internal experiences can reinforce a non-accepting and judgmental stance towards emotional experience (Baer, Smith & Allen, 2004). Therefore, interventions that focus on supporting individuals to avoid or control their emotions may unintentionally be associated with psychological inflexibility (Gratz, Bornovalova, Delany-Bumsey, Nick & Lejuez, 2007).

2.1 Acceptance and Commitment Therapy

Acceptance and Commitment Therapy (ACT) is a psychological intervention that seeks to increase an individual's ability to respond to their experiences with acceptance and creativity, by cultivating PF. ACT is rooted in Relational Frame Theory (RFT), a modern behavioural explanation of language acquisition (Hayes, Barnes-Holmes & Roche, 2001). RFT seeks to understand the contexts in which language can control and promote suffering, and also identify contexts that undermine the role of language (Ciarrochi, Bilich & Godsell, 2010).

The ACT model outlines six overlapping processes, which are organised into a 'hexaflex'. An ACT practitioner will draw on these six processes in order to build PF:

1. **Acceptance:** a willingness to contact and embrace difficult inner experiences. Acceptance is fostered as a method of increasing values-based

action, through an active curiosity and deliberate exploration of thoughts and feelings (Hayes, Pistorello & Levin, 2012).

2. **Cognitive Defusion**: developing skills in experiencing and observing thoughts, feelings, and bodily sensations; allowing a person to become aware of their experiences and change the way they relate to them.
3. **Being Present**: the on-going, non-judgemental contact with psychological and environmental events as they occur. It involves using mindfulness and awareness training exercises to consciously pay attention to here and now experiences.
4. **Self-as-context**: exploring the practice of experiencing oneself as the context in which thoughts and emotions occur, rather than becoming overly preoccupied with the nature of these experiences.
5. **Values:** ACT places specific emphasis on individuals exploring valued life domains. It is thought that clarifying values can give direction and create a meaningful life.
6. **Committed action**: taking effective action, which is guided by your values. Psychological and behavioural flexibility is promoted when engaging in committed action that is consistent with moving towards valued directions.

The ACT model posits that human suffering is often rooted in *Experiential Avoidance (EA)*, the tendency of individuals to seek to avoid or alter difficult private events, even when doing so leads them to act in a manner inconsistent with their values or goals (Hayes, Luoma, Bond, Masuda & Lillis, 2006). "Psychological inflexibility can be thought of as being excessively entangled in EA and Cognitive fusion, and having difficulties connecting with the context of a situation and choosing behaviour in line with identified values and goals" (Hayes, Strosahl & Wilson, 1999). Therefore, within ACT the focus is not just on the reduction of discomfort but in allowing oneself to behave in a valued way, in the presence of this discomfort. The overall aim of ACT is to maximise human potential for a rich and meaningful life (Ruiz, 2010; Ciarrochi, Kashdan & Harris, 2013).

Psychological inflexibility and EA are theorized to contribute to the development, maintenance and exacerbation of a broad range of psychological problems (Bond & Bunce, 2003). This research has been conducted on

populations with social anxiety (Dalrymple & Herbet, 2007), depression (Cash & Whittingham, 2010) and borderline personality disorder (Rusch et al., 2008). Moreover, previous studies have also demonstrated that PF will be positively correlated with positive mental health (A-Tjak et al., 2015; McCracken, Gutierrez-Martinez, & Smyth, 2013).

ACT is referred to as a "third wave" therapy, in that it builds on the cognitive-behavioural therapy tradition, which in turn was formed on the foundations created by behavioural therapy. Rather than focusing on changing psychological events directly through first-order change strategies, these interventions seek to explore the functional context in which these symptoms are experienced and employ second-order change strategies such as mindfulness, acceptance, or cognitive defusion (Teasdale, Segal & Williams, 2003).

2.2 Compassion Focused Therapy

Another "third wave" therapy with an increasing evidence base is Compassion Focused therapy (CFT) developed by Paul Gilbert (Gilbert, 2009a). It is purported to be particularly useful for people who experience high levels of shame, self-criticism, and an increase in self-attacking cognitions. CFT encourages people to experience their difficult thoughts and feelings by helping them develop a more compassionate stance towards themselves. According to Gilbert (2009a), the ability to "self-soothe" develops within an environment of secure attachment with early caregivers. In a developmental context characterised by abuse and neglect, the affect regulation system responsible for self-soothing and safeness does not develop properly because the individual invests most of their time and resources into identifying and responding to threats. In this context, "a self-critical style is often internalised as a protective strategy to prevent further abuse and to develop a better (less inferior) social rank" (Gilbert & Irons, 2005). Therefore, through examining self-critical processes a therapeutic approach was developed that is designed to reduce shame and self-criticism by helping patients develop self-compassion. Neff (2003b) states that the concept of self-compassion can be seen as a healthy alternative to both self-criticism and high self-esteem and

consists of three main components: *Self-kindness*, *Common humanity* and *Mindfulness*.

Steven Hayes (2012), the co-founder of ACT, has described ACT and CFT as 'fellow-travellers'. Both these therapies have a focus on mindful acceptance. This is a process that leads to mental states characterised by non-judgmental awareness of the present moment experience, including one's sensations, thoughts, bodily states, consciousness, and the environment, while encouraging openness, curiosity, and acceptance (Kabat-Zinn, 1994). Research has shown that developing mindfulness practice, can lead to an increase in positive aspects of mental health and a reduction of psychological symptoms of distress (Nyklicek & Kuijpers, 2008). Mindfulness, from an ACT perspective consists of the four of the six processes associated with PF outlined above; namely Acceptance, Cognitive Defusion, Being present, and Self-as-context (Wilson and Defrue, 2009).

2.3 The Flexibility of Responses to Self-critical Thoughts Scale (FoReST)

The Acceptance and Action Questionnaire (AAQ-II; Bond et al., 2011) has been developed as a measure of psychological inflexibility. It assesses the extent to which an individual's cognitions can prevent them from engaging in value-consistent actions (e.g. "I'm afraid of my feelings", "My painful memories prevent me from having a fulfilling life"). A range of context-specific measures of the AAQ have been developed e.g. VAAQ (hallucinatory experiences); AAQ-SA (substance abuse); WAAQ (occupational settings) (Bond, Lloyd & Guenole, 2013). However, there is not currently a measure that assesses psychological inflexibility in relation to self-critical thoughts. The need to have such a measure is supported by research that highlights high levels of self-critical thinking in various forms of mental health difficulties including: depression (Yamaguchi & Kim, 2013); eating disorders (Goodwin et al., 2014); social anxiety (Kopala-Sibley et al., 2013) and psychosis (White, 2013). Efforts to evaluate the efficacy of CFT to improve self-critical thoughts, have led to the development of a range of assessment measures. This includes measures of self-compassion (Self-Compassion Scale: SCS, Neff, 2003a) and self-criticism (Forms of Self-Criticizing/Attacking & Self-Reassuring Scale: FSCRS, Gilbert, Clarke, Hempel, Miles & Irons, 2004). From an ACT perspective, the key issue is not whether self-attacking cognitions are present, it

is instead the extent to which the person fuses with these cognitions and treats them as a barrier to engaging in value-consistent behaviour.

To investigate the potential value of integrating ACT approaches with CFT techniques, a new assessment measure has been developed to assess changes in a client's psychological flexibility, in response to their self-critical thoughts i.e. the *FoReST: Flexibility of Responses to Self-critical Thoughts Scale* (Larkin & White, 2014). Specifically, the FoReST was developed to explore people's willingness to experience self-attacking thoughts, whilst simultaneously committing to values-directed action, in the presence of such thoughts. Larkin and White (2014) conducted an Exploratory Factor Analysis (EFA) that investigated the factor structure of the FoReST in a convenience sample of 253 adults, with no history of contact with psychiatric services. Construct validity was explored by comparing the FoReST with measures of similar constructs, such as: psychological inflexibility (AAQ-II), self-compassion (SCS), self-criticism (FSCRS), and other relevant outcomes including anxiety, depression and quality of life. Factors were extracted using a Maximum-likelihood EFA. An acceptable 2-factor model was identified which explained approximately 60% of available variance, and the measure demonstrated good internal consistency, concurrent and predictive validity (Larkin & White, 2014).

2.4 Aims and hypotheses

This study aimed to continue the development of the FoReST by validating its use in a clinical population; recruited from primary care and secondary care mental health services. This included an examination of the **internal consistency** of the FoReST i.e. determining the extent to which each item on the FoReST measured the same construct. Secondly, the **Construct Validity** of the FoReST was assessed by measuring the: *concurrent validity* (the extent to which the FoReST correlates with other measures of the same construct that are measured at the same time, including the extent to which a score on the FoReST correlates with validated measures of depression, anxiety and quality of life), and *incremental validity* (the extent to which the FoReST explains the proportion of variance, above and beyond that of other existing measures). It was hypothesised

that the factor structure obtained for the FoReST within a clinical sample would mirror that obtained using a non-clinical sample by Larkin and White (2014).

3. METHOD

3.1 Design

A cross-sectional, correlational design study was used.

3.2 Eligibility criteria

Participants had to be attending a Primary Care Mental Health Team (PCMHT), Community Mental Health Team (CMHT), or a Psychological Therapy Team (PTT) within NHS GGC or NHS Lanarkshire. Participants had to be over 18 years of age (no upper limit) and proficient in English. Participants who had a learning disability or cognitive impairment were not invited to take part in the study, along with those who were assessed by clinicians to be actively psychotic.

3.3 Participants

A sample of 132 patients attending PCMHT (N = 39), CMHT (N = 78) and PTT (N =15) participated in the study. Participants had a mean age of 37.70 years (S.D 13.32), with a range of 18-72 years. The sample was 68.2% female and the majority of participants identified as White (95.5%). More than half of the participants were in employment, full time (36.4%) or part time (20.5%). One third of the sample were not employed (33.3%) and 8.3% were in full-time education. The Scottish Index for Multiple Deprivation (SIMD) scores were calculated using postcodes, with 1 indicating the most deprived areas to 5 (most affluent). Appendix 2.2 gives a full exploration and description of SIMD scores. Participants were asked to self-report all relevant mental health difficulties that they experienced. This list was taken from the Adult Mental Health Diagnoses within the Psychological Matrix (NHS Education for Scotland, 2015). See Questionnaire booklet (Appendix 2.3) for full list.

Table 1 provides an overview of the demographic characteristics and Table 2 provides an overview of the participants self-reported mental health difficulties.

Table 1: Demographic characteristics of participants

Age			
	Mean = 37.7 (SD= 13)		
		Participants (N= 132)	***(%)***
Gender			
	Male	40	30.3
	Female	90	68.2
	Transgender	2	1.5
Ethnicity			
	White	126	95.5
	Chinese	1	.8
	Other Asian	3	2.3
	Other	1	.8
	missing	1	.8
SIMD			
	1	21	15.9
	2	16	12.1
	3	29	22
	4	10	7.6
	5	34	25.7
	missing	22	16.7
Employment			
	Yes (Full time)	48	36.4
	Yes (Part time)	27	20.5
	No	44	33.3
	No (Full time education)	11	8.3
	missing	2	1.5
Mental health team			
	PCMHT	39	29.5
	CMHT	78	59.1
	PTT	15	11.4
Psychotropic Medication			
	Yes	41	31.1
	No	91	68.9

Table 2: Descriptives of participant's self-rated mental health difficulties

	Participants (N= 132)	***%***
Depression/low mood	100	75.8
Generalised Anxiety Disorder	77	58.3
Sleep difficulties	49	37.1
Social Anxiety/Social Phobia	43	32.6
Self-harm and suicidal behaviours	26	19.7
Obsessive-compulsive disorder	24	18.2
Anger	24	18.2
Panic with/without Agoraphobia	23	17.4
Eating Disorder	19	14.4
Trauma/PTSD	14	10.6
Personality Disorder	10	7.6
Bipolar Disorder	9	6.8
Drug/Alcohol problems	5	3.8
Psychosis	3	2.3
Other	7	5.3
Low self-esteem	2	1.5
Intrusive thoughts	1	.8
Bereavement	1	.8
Stress	1	.8
Phobia	1	.8
Obsessive personality disorder	1	.8

3.4 Measures (See Questionnaire Booklet, Appendix 2.3)

1. Flexibility of Responses to Self-critical Thoughts Scale- FoReST (Larkin & White, 2014) A *12-item* measure of how people can move towards their valued actions, while experiencing self-critical thoughts (e.g. "*When I have a critical thought about myself*…I do things I later regret"). A FoReST total score is calculated by summing together all 12 items. Higher scores indicate greater levels of psychological inflexibility. It demonstrated good internal consistency in a non-clinical sample (α=0.85).

2. Acceptance and Action Questionnaire- AAQ-II (Bond et al., 2011). A 7-item measure of capacity to accept experiences, difficult or otherwise, and take value-directed action regardless of them (e.g. "I'm afraid of my feelings"). It has demonstrated good internal consistency (r=0.84), test-retest reliability (r=0.79), and construct validity.

3. Forms of Self-Criticizing/Attacking & Self-Reassuring Scale- FSCRS (Gilbert et al., 2004). A 22-item measure, which assesses the forms of Self- criticising and

self-reassuring thoughts (e.g. "when things go wrong for me I am easily disappointed with myself"). Inadequate-Self and Self-Hating subscales were found to have internal consistency of 0.90 and 0.86 respectively in a sample of female students.

4. Self-Compassion Scale- SCS-SF (Neff, 2003a). A *12-item* measure exploring self-compassion in individuals (e.g. "I'm kind to myself when I'm experiencing suffering"). It has been shown to have excellent internal consistency in a student sample (α=0.92).

5. Hospital Anxiety and Depression Scale- HADS (Snaith and Zigmond, 1994). A *14-item* measure of current symptoms of anxiety and depression. HADS-A has demonstrated Cronbach's α between 0.68 and 0.93 (mean 0.83) and for HADS-D scored between 0.67 and 0.90 (mean 0.82). Clinical cut-off scores for the HADS-A and HADS-D scores are categorised as: normal (0-7), 8 or above = caseness. (Aben, 2002; Akizuki, Akechi & Nakanishi, 2003)

6. Work and Social Adjustment Scale- WSAS (Mundt, Marks, Shear & Griest, 2002). A *5-item* measure of impairment in work and social domains, due to mental illness or stress (e.g. "Because of my problems my ability to work is impaired"). Cronbach's α scores reported between 0.79 and 0.94 and an overall test-retest correlation of 0.73.

7. Mental Health Continuum-Short Form- MHC-SF (Keyes et al., 2008). A 14-item measure that aims to assess three components of well-being: emotional (3 items), social (5 items) and psychological (6 items). MHC has shown excellent internal consistency (> .80) and discriminant validity (Lamers, Boiler, Westerhof, Smit & Bohlmeijer, (2011).

3.5 Procedures

There were 18 recruitment sites in total, ten CMHT's, four PCMHT's and four PPT's. Participants were recruited over a five-month period, between February and June 2016. The lead researcher visited all participating sites and

presented to clinical teams; providing information about the study and the recruitment protocol. Clinicians were advised to only invite and provide a research pack to those patients who met the eligibility criteria (see Staff Information sheet, Appendix 2.4). The research pack included a Consent form (Appendix 2.5), Participant information sheet (Appendix 2.6), Questionnaire booklet (Appendix 2.3), Debrief sheet (Appendix 2.7) and a Freepost return envelope. Clinicians were required to assess the capacity of participant to consent. After participants read the information sheet, staff would complete a consent form with the participant before they could take part in the study. Participants were encouraged to complete the questionnaire booklet in the waiting area and return to reception, however, participants could also complete an online version of the questionnaire booklet, following a link found on the Participant information sheet. Nineteen participants (14.4%) opted to complete the study online.

3.6 Ethical Approval

Ethical approval was granted by the NHS West of Scotland Research Ethics Committee, Ref: 16/WS/0010 (Appendix 2.8). Managerial approval was obtained from NHS GGC and NHS Lanarkshire Research and Development (Appendix 2.9).

3.7 Sample size justification

There are varying opinions regarding adequate sample size for factor analysis. (See MRP proposal, Appendix 2.10, pg 120). Friendly (2008) state that the number of subjects (N) > 10p, where p is the number of items. Nunnally (1978) also recommended having 10 times as many participants as variables. Therefore, as the FoReST has 12 items, the researcher aimed to recruit 120 participants.

3.8 Data Analyses

All statistical analyses were performed using SPSS-22 analysis package. Similarly, to Forman et al., (2012), a confirmatory factor analysis was not used because one cannot assume that the clinical population would necessarily respond in the same way as the non-clinical population in Larkin & White (2014). Therefore, a Maximum-likelihood Exploratory Factor Analysis was used to extract

the latent factors. "*Kaiser's criterion*" was adopted, retaining all factors with Eigenvalues over 1 (Kaiser, 1960). The Oblique rotation procedure- *Direct Oblimin* was selected, as it was expected that factors of the latent construct of PF would correlate (Field, 2013). Internal consistency was measured by completing a Cronbach's alpha.

Construct validity was investigated by determining if the construct assessed by the FoReST was correlated with the constructs that it was intending to measure. Spearman correlation analyses were conducted to investigate the associations between the FoReST and other related measures of psychological inflexibility, self-attacking cognitions and self-compassion (*Concurrent validity*). Further correlation analyses were conducted to determine associations between the FoReST scores and potentially related outcomes of depression, anxiety, quality of life and well-being. Cohen (1992) guidelines were used to interpret effect sizes (ES). *Incremental validity* was examined using multiple regression analyses, assessing the usefulness of the FoReST at predicting variance over and beyond existing measures.

4. RESULTS

4:1 Missing data

The initial stage of data analysis was an exploration of the patterns of missing data. In agreement with other studies where participants missed fewer than three of the FoReST questions, missing scores were prorated using the average response of the remaining FoReST items (Gillanders et al., 2014). Rates of missing data were low (0.12%). Only one participant had to be excluded. This was due to them completing only one of the questionnaires.

4.2 Factor Structure/Exploratory Factor Analysis

The suitability of EFA was assessed prior to analysis. Inspection of the correlation matrix showed that all variables had at least one correlation coefficient greater than 0.3. The overall Kaiser-Meyer-Olkin (KMO) test of sampling adequacy was 0.855, with individual KMO measures all greater than 0.7. This met the classifications of 'Meritorious ' to 'Marvellous' according to Hutcheson and

Sofroniou (1999). Bartlett's test of Sphericity was statistically significant (x^2 = 1179.359, *df* = 66, *p* < 0.0001) indicating that the data was suitable for factor analysis.

A Maximum likelihood factor analysis of the 12 items resulted in two factors with eigenvalues greater than 1. Factor 1 had an eigenvalue of 5.59, explaining 46.6% of the variance; Factor 2 had an eigenvalue of 2.74, accounting for 22.9% of the variance. A two-factor solution met the interpretability criterion and was observed through the scree plot (Cattell, 1966). Therefore, two factors were retained and a further EFA completed forcing a two-factor solution. The two-factor solution explained 69.5% of the total variance. A Direct Oblimin, oblique rotation procedure was employed to aid interpretability and the rotated solution exhibited 'simple structure' (Thurstone, 1947). The interpretation of the data was consistent with the attributes the assessment measure was designed to measure, with strong loadings of '*Experiential avoidance*' on Factor 1 and '*Unworkable action'* on Factor 2. This is in line with the factor loadings described by Larkin and White (2014). Factor loadings of the rotated solution are presented in Table 3. (See Appendix 2.11 for EFA output from SPSS).

Table 3: Factor Loadings of FoReST items (N= 132)

Item	**Factor 1**	**Factor 2**
"When I have a critical thought about myself….."		
I feel so disgusted at myself that I don't act the way I should	-.06	**.93**
I feel so ashamed that I don't act the way I should	-.01	**.90**
It gets me so down that I don't act the way I should	.03	**.79**
I act in a way that makes life more difficult for me	-.01	**.78**
I do things I later regret	.04	**.70**
I don't treat others the way I would like	-.17	**.69**
It makes me lose control of my behaviour	.15	**.64**
I don't treat myself the way I would like	.13	**.62**
I try not to think about it	**.99**	-.09
I try to ignore it.	**.90**	.01
I try to block out any feelings it creates	**.75**	.08
I pretend it's not there	**.72**	.03
% Variance Explained	46.6%	22.9%
TOTAL % Variance Explained	69.5%	
Scale Mean (SD)	49.8 (14.6)	
Internal Consistency (α coefficient)	.89	
Correlation between factors	.27	

Note: Entries in bold represent the factor on which the item loaded most highly.

4.2.1 Calculation and descriptive statistics

The distribution of FoReST scores were examined for central tendency and spread. Scores on the FoReST ranged from 12 to 83, with a mean of 48.82 and standard deviation of 14.62. The distribution showed a slightly negative skew (-0.23), indicating a trend towards inflexibility. The FoReST was examined for internal consistency, with Cronbach's alpha indicating a good level of internal consistency (α = .89). Table 4 shows the mean, standard deviation, median, percentiles and Cronbach's alpha coefficients for all of the measures used.

Table 4: Mean, Standard deviation and Cronbach alpha levels

	M	*SD*	*Median*	*IQR*	α
FoReST	49.82	14.62	49.50	41.00 - 61.75	.89
AAQ-II	33.62	9.19	35.00	27.25 - 41.75	.89
SCS-SF	25.98	7.87	25.50	20.00 - 32.00	.81
FSCRS- F1	26.39	8.03	29.00	22.00 - 33.00	.89
FSCRS-F2	9.47	5.65	9.00	5.00 - 14.00	.83
FSCRS-F2	12.23	6.38	11.00	8.00 - 17.00	.84
HADS (Total)	22.20	7.35	23.00	17.00 - 27.00	.86
HADS-A	12.85	4.20	13.00	10.00 - 16.00	.84
HADS-D	9.36	4.48	9.00	6.00 - 13.00	.83
WASAS	19.04	9.28	18.50	14.00 - 35.75	.82
MHC-SF	25.05	14.72	22.50	12.00 - 26.00	.93

Note: AAQ-II = Psychological Flexibility; SCS-SF = Self-compassion; FSCRS-F1 = Inadequate Self; FSCRS-F2 = Hated Self; FSCRS F3 = Reassured Self; HADS = Anxiety/Depression; WASAS = Quality of Life; MHC- SF = Mental health flourishing/languishing

4.3 Construct Validity

The construct validity of the FoReST total score was examined by exploring its relationship to potentially related constructs. The measures were not normally distributed and therefore non-parametric correlations were conducted using Spearman *rho* analyses. Mann-Whitney U and Kruskal-Wallis H tests were used for categorical data, when appropriate. To address family-wise type- I errors, a Bonferroni corrected significance level of $p < .003$ was adopted. The correlations with other measures are presented in Table 5.

Table 5: Correlations Between FoReST and Existing Measures (N= 132)

	Statistic	*FoReST*
Similar Constructs		
Psychological Flexibility (AAQ-II)	Spearman's *rho*	.612**
	Sig (2-tailed)	.000
Self-compassion (SCS-SF)	Spearman's *rho*	-.478**
	Sig (2-tailed)	.000
Self-criticism (FSCRS)		
Inadequate sub-scale	Spearman's *rho*	.546**
	Sig (2-tailed)	.000
Hating sub-scale	Spearman's *rho*	.588**
	Sig (2-tailed)	.000
Reassuring sub-scale	Spearman's *rho*	-.384**
	Sig (2-tailed)	.000
Mental health/Well-being measures		
Total score (HADS- Total)	Spearman's *rho*	.503**
	Sig (2-tailed)	.000
Anxiety (HADS-A)	Spearman's *rho*	.386**
	Sig (2-tailed)	.000
Depression (HADS-D)	Spearman's *rho*	.454**
	Sig (2-tailed)	.000
QoL (WASAS)	Spearman's *rho*	.529**
	Sig (2-tailed)	.000
Well-being (MHC-SF- Total)	Spearman's *rho*	-.451**
	Sig (2-tailed)	.000
Potential Confounding Factors		
Age	Spearman's *rho*	-.177
	Sig (2-tailed)	NS
Gender	Kruskal-Wallis H test	.139
	Sig (2-tailed)	NS
Employment	Kruskal-Wallis H test	.026
	Sig (2-tailed)	NS
SIMD	Kruskal-Wallis H test	.514
	Sig (2-tailed)	NS
Medication	Mann Whitney U test	.482
	Sig (2-tailed)	NS

**Correlation is significant at Bonferroni corrected Significance level (.003)

Concurrent validity was demonstrated by significant correlations between the FoReST scores and scores obtained on the AAQ-II (Psychological inflexibility), SCS-SF (Self-compassion) and FSCRS (Self-criticism) (See Table 5). Correlations were in the expected direction, such that higher scores on the FoReST were related to greater experiential avoidance, as measured by the AAQ-II (Large ES) and the Hating self and Inadequate self-subscales (Large ES). Negative correlations were found with self-compassion (Medium ES) and the Self-reassuring subscale (Medium ES). Correlation analyses were also explored to see if the FoReST was associated with potentially related outcomes of Anxiety and Depression scores

(HADS), Quality of Life (WASAS) and Well-being (MHC-SF). Moderate significant correlations were found. A Kruskal-Wallis H test was also run to determine if there were differences in FoReST scores between the three categories of subjective wellbeing outlined by the MHC-SF: "*Languishing"* (*n*=61), "*Flourishing*" (*n*=13) and "*Moderately Mentally Healthy*" (*n*=58). Distributions of FoReST scores were similar for all groups, as assessed by visual inspection of a boxplot. As to be expected a statistically significant difference was found between groups, χ^2 (2) = 16.05, $p < .001$. The Languishing group recorded the highest median score (*Md*= 53), followed by the Moderately Mentally Healthy group (*Md* = 46), and then the Flourishing group (*Md* = 43). A statistically significant difference was also found in the AAQ-II scores, between the 3 groups (χ^2 (2) = 43.63, $p < .001$).

Incremental validity was assessed by conducting multiple regression analyses, to determine the contribution of the FoReST in predicting variance in the total HADS score. To assess linearity, first scatterplots with superimposed regression lines were plotted. Visual inspection of these plots indicated a linear relationship between the variables. The assumption of homoscedasticity and normally distributed residuals was met.

The first model included AAQ-II and FoReST scores. The multiple regression model statistically significantly predicted total HADS score, *F* (2, 129) = 72.08, $p < .0005$. R^2 for the overall model was .582, meaning this model explained 58.2% of the variance in the HADS score, a large size effect according to Cohen (1992). Table 6 shows the regression output; AAQ-II made the strongest unique contribution to explaining the variance (28%). The FoReST did not make a significant unique contribution when all other variables were controlled for (.2%).

The second model included FoReST scores and the subscales within the FSCRS (Inadequate, Hating, and Reassuring). The multiple regression model statistically significantly predicted total HADS score, *F* (4, 127) = 21.89, $p < .0005$. R^2 for the overall model was .408, meaning this model explained 40.8% of the variance in the total HADS score, a large size effect according to Cohen (1992). Examining the coefficients, it was found that the Hating subscale made the strongest unique contribution to explaining the variance (6%). The FoReST and the reassuring subscale also made significant contributions when all other

variables were controlled for (4% and 3% respectively). Regression coefficients and standard errors can be found in Table 6.

Table 6: Summary of Multiple Regression Analysis for predictors of total HADS scores

Variable	*B*	SE_B	β
Constant (Model 1)	2.247	1.798	
AAQ	.551	.063	.688*
FoReST	.029	.039	.058
Constant (Model 2)	17.887	2.712	
FoReST	.133	0.45	2.64*
Inadequate subscale	-.82	.098	-.90
Hating subscale	.409	.148	.315*
Reassuring subscale	-.328	.091	-.285*

Note: * $p<.05$; B = unstandardised regression coefficient; SE_B = Standard error of the coefficient; β = standardised coefficient

4.3.1 Assessment of Potential Confounding Factors

Age, gender, employment, SIMD, and medication were identified as factors that may impact on the generalisability of findings. However, Table 5 shows that the FoReST scores were not significantly associated with any of the above factors.

5. DISCUSSION

In recent years there has been growing interest in psychological flexibility as a potential process of change in third wave psychological interventions. Although there have been a range of different measures of psychological inflexibility developed to target specific contexts; the FoReST is the first measure to assess how people can be open to the experience of self-critical thoughts whilst committing to valued actions. The aim of this study was to investigate the psychometric properties of the FoReST within a clinical population consisting of individuals presenting at primary and secondary care mental health services. Initial analyses supported the factor structure and theory underlying the FoReST, as reported by Larkin & White (2014). The two-factor solution of '*Experiential avoidance'* (Factor 1) and '*Unworkable action'* (Factor 2) explained 69.5% of the

total variance, which is marginally higher compared with the non-clinical sample (60%). Interestingly, within Factor 2 (Unworkable action), the highest loadings were found on the items that were specifically related to shame and disgust. This contrasts to what Larkin & White (2014) found in a non-clinical sample and adds more evidence to the hypothesis that self-critical thoughts are more prevalent in those experiencing mental health difficulties (Yamaguchi & Kim, 2013).

The FoReST showed a high level of internal consistency (α = .89), which was comparable and in some cases greater than that found in the other standardised measures used in the current study (Table 4). The results of the study also provide support for the concurrent and predictive validity of the FoReST in a clinical sample for the first time by demonstrating significant correlations in the expected directions with measures assessing other relevant constructs.

When examining the pattern of correlations with other measures, the single highest correlations were found between the FoReST and the AAQ-II (r_s (130) = .612). This finding is consistent with what would be anticipated as the AAQ-II and the FoReST are both purported to be measures of psychological inflexibility, with the AAQ-II being a more general measure and the FoReST being specific to self-critical thoughts. The recently published Cognitive Fusion Questionnaire (CFQ; Gillanders et al., 2014) has been shown to correlate strongly with the AAQ-II (r ranging from .72 to .87). It may be interesting to include the CFQ in further validation studies, as not only does it measure a key component of ACT, but in contexts where assessment is made with regard to cognitions, especially intrusive thoughts (Gillanders et al., 2014).

The findings of the current study also have important implications for Compassion Focused Therapy (CFT). CFT seeks to help individuals develop a compassionate stance towards themselves and to cope with challenging emotions with a greater degree of understanding, self-directed care, and openness (Gilbert, 2009b). A key driver in the development of the FoReST was the extent to which CFT and ACT potentially overlap and complement one another in terms of processes of change. It is possible that the efficacy of CFT could be enhanced by specifically integrating a focus on the extent to which a person is inflexible with

self-critical thoughts. Multiple regressions of the FoReST for predicting total HADS scores demonstrated that the measure had incremental validity; accounting for an additional 4% of the variance not explained by the FSCRS. There was not a statistically significant unique contribution of the FoReST in predicting total HADS scores when compared against the AAQ-II. However, we know that the HADS is just one measure of overall distress and further investigation should be done to explore the unique variance of the FoReST with other measures of mental health and well-being. These results are consistent with broader conceptualisation of psychological inflexibility being predictive of depression scores.

The Mental Health Continuum-Short Form (MHC-SF) was used as a general measure of subjective wellbeing. For the purpose of the correlations, the MHC total score was calculated. However, in addition, the measure is intended to provide a categorical diagnosis of 'flourishing', 'languishing' or 'moderately mentally healthy'. From his extensive research Keyes (2002) has proposed that within the general population; 17.2% meet criteria for flourishing, 12.1% languishing and 56.6% moderately mentally healthy. As to be expected within this clinical sample, the numbers of those who fell into the languishing category were statistically greater than predicted for the general population (Flourishing (9.9%), languishing (46.2%), and healthy (43.9%).

5.1 Strengths and Limitations

The overall intention was to create a measure with clinical utility. Therefore, one strength of this study was the recruitment of a relatively large clinical sample. It was a diverse sample in terms of age, socioeconomic factors, and severity of mental health difficulties. This may result from increasing the number of recruitment sites, and working hard to establish and maintain good working relations with staff teams to get them on board with the applicability of the research. Through this process, many links with local teams have been formed that may help further recruitment, and enables the potential to roll out the measure on a wider scale. The FoReST appears to have good content validity evidenced by the high response rate of participants and low rates of missing data.

There are some noteworthy limitations with this current study. One concern is the generalisability of the FoReST. Although participants were recruited from a range of different mental health teams across Glasgow and Lanarkshire, it is not a random sample of those experiencing mental health difficulties within the general population. The sample was mainly comprised of white, employed females. Significant differences were not detected between the responses of male and female participants. Nonetheless, the sample is limited in its ability to generalize to samples of males and individuals from different cultural and ethnic backgrounds. Research indicated that many widely used measures perform differently across ethnic groups (Hambrick et al, 2010), therefore collecting data from participants from a variety of demographic regions would likely yield a more diverse sample. In addition, although the sample size was adequate to complete the EFA, it was still relatively small and at the lower end of what would be considered adequate for fully evaluating a new instrument. In order to complete a Confirmatory Factor Analysis, which would be the next stage in validation, a greater number of participants would need to be recruited, for example $N>200$ (Friendly, 2008).

Using a cross sectional design also limited the ability to make predictions regarding psychological inflexibility relating to self-critical thoughts and its association with psychological disorders over time. The direction of causality is impossible to determine. Conducting longitudinal studies is therefore recommended and using test-retest reliability would also help assess the consistency of the FoReST over time.

Participants were asked to self-rate their mental health difficulties/diagnoses. Other studies have relied on clinical diagnosis being confirmed by clinicians (White et al., 2012; Sandoz et al., 2013; Gillanders et al., 2014). It was felt that this level of involvement of clinicians would be not be feasible for this study, however it is something that future studies should consider.

Another limitation was the restriction to English version of questionnaires. It would be beneficial to develop and test the FoReST among different cultures and linguistic groups. Patients that exhibited psychotic behaviours were also not eligible to participate in this study due to capacity to consent. Further validation of the FoReST would be beneficial within a clinical population who experience

psychosis as this is a particular client group that are shown to receive benefits from ACT with a self-compassion stance (White, 2013)

Finally, there can be high response bias when using self-report measures. Self-report measures are a frequent target of criticism within psychological assessment and the psychological processes underlying an act of self-reporting these can be extremely complex. Some people can show a tendency to respond to questions in a way that can interfere with the validity and accuracy of the responses (Paulhus &Vazire, 2007). From visual inspection of the completed questionnaires, data from a few participants indicated that they might have responded carelessly, such as repeatedly answering the same numeric response with very little variability. As reported in Luoma et al., (2011), an attempt could have been made to remove this data that may have been invalid and impacted on the interpretation of the results. From the exploration of the factor loadings in Table 3; it was observed that the first 8 questions (Q1-8) are related to unworkable action and the final 4 questions of the FoReST (Q9-12), are related to aspects of Experiential avoidance. Schwartz (1999) states that "self-reports are a fallible source of data, and minor changes in question wording, question format, or question context can result in major changes in the obtained results". In order to address this bias, it may be worth considering rearranging the order of the FoReST items so that the two factors are interspersed, as seen within the Cognitive Fusion Scale (Gillanders et al., 2014); the Drexal Defusion Scale (Forman et al., 2012) and the Valuing Questionnaire (Smout et al., 2014). The FoReST also contains no reverse scoring items. Rewording some of the items to include this, for example, 'When I have a critical thought about myself, I try and think about it all the time', may limit the potential impact of response bias (i.e. stop the respondent putting the same response for every question) and help increase validity and accuracy.

A criticism of some measures of psychological flexibility is their capacity to accurately measure secondary appraisals of internal responses, such as thoughts and emotions. Judd and McClelland (1998, p 2) state, "Self reports are built on the assumption that individuals have access to the psychological property that the researcher wishes to measure". This is particularly relevant with ACT measures, as PF (as conceptualised within ACT), could be considered a complex construct to

define. Kagan (1998) comments that self-report measures take for granted that people have enough self-awareness to be able to discern why they do the things they do but this is not always the case.

The FoReST and other measures of PF, may benefit from having a narrative at the beginning of the questionnaire, helping orientate the reader to what the questionnaire is trying to measure. It may also be advantageous to begin with a few enriching questions to help access a recent time or experience when they were feeling negative and experienced a lot of self-critical thoughts. Prompting the respondent to hold a particular experience in mind (e.g. a recent time when they experienced self-critical thoughts) while they answer the FoReST, may serve to improve the ecological validity of the measure – i.e. that the measure accurately captures how the person responds to self-critical thoughts in their everyday life. It may also be an idea to reword the questions within the FoReST. Rather than having the statement, "When I have a critical thought about myself…" at the start of the questionnaire, it could be embedded into the questions to make a more coherent sentence. For example, 'Having a critical thought about myself makes me lose control of my behaviour' or 'I do things I later regret when I am feeling very critical of myself'.

5.2 Clinical Implications and recommendations

This research will add to the continued evaluation of a measure that is unique in exploring the capacity to act in an open, flexible, values-congruent manner, in the presence of self-critical thoughts. It was the first time this measure was administered to a clinical population with reported psychological difficulties. Levin et al. (2014) found that psychological inflexibility is related to comorbidity across classes of disorders, particularly depression and anxiety. We know that self-critical thoughts can also occur in various types of mental health problems and so this unique measure may also have a transdiagnostic application. Beaulieu et al., (2012) reported that comorbid presentations tend to be associated with more severe impairment and can be more difficult to treat, however research has shown that ACT and Mindfulness approaches to target psychological inflexibility, may be particularly beneficial when treating patients with comorbid mood and anxiety disorders (Arch et al., 2013). Therefore, this questionnaire will be of use

for practitioners using ACT, CFT, and those integrating both. It is quick and convenient to administer and therefore could provide an easy way to track progress of patient's flexibility and their relationship with self-critical thoughts over the course of therapy.

7. CONCLUSION

In summary, this study provides considerable support for the validity and utility of the FoReST within a clinical population. The results of this study are encouraging and possess both empirical and clinical implications. Results were also compatible with the original findings and factor structure laid out in Larkin & White (2014). The FoReST is the first brief psychometric assessment tool that specifically assesses psychological flexibility in response to self-critical thoughts. The scale has shown high levels of internal consistency and validity via predicted patterns of relationships with other measures of similar constructs. Future longitudinal research will be needed to establish the FoReST as a psychometrically reliable measure in diverse populations and clinical settings. This is the first measure available that effectively captures the core therapeutic process of change in ACT with highly self-critical individuals.

REFERENCES

A-Tjak, J.G., Davis, M.L., Morina, N., Powers, M.B., Smits, J.A., & Emmelkamp, P.M. (2015). A meta-analysis of the efficacy of acceptance and commitment therapy for clinically relevant mental and physical health problems. *Psychotherapy and psychosomatics,* 84 (1), 30–6.

Aben, I., Verhey, F., Lousberg, R.(2002). Validity of the Beck Depression Inventory, Hospital Anxiety and Depression Scale, SCL-90 and Hamilton Depression Rating Scale as screening instruments for depression in stroke patients. *Journal of Consultation Liaison Psychiatry*, 43.

Akizuki, N., Akechi, T., Nakanishi, T. (2003). Development of a brief screening interview for adjustment disorders and major depression in patients with cancer. *Cancer,* 97, 2605-2613.

Arch, J., Ayers, C.R., Baker, A., Almklov, E., Dean, D.J., & Craske, M.G. (2013). Randomized clinical trial of adapted mindfulness-based stress reduction versus group cognitive behavioral therapy for heterogeneous anxiety disorders. *Behaviour Research and Therapy, 51*, pp. 185–196

Baer, R. A., Smith, G. T. & Allen, K. B. (2004). Assessment of mindfulness by self-report: The Kentucky inventory of mindfulness skills. *Assessment 11* (3), 191-206.

Beaulieu, S., Saury, S., Sareen, J., Tremblay, J., Schutz, C. G., McIntyre, R. S., & Schaffer, A. (2012). The Canadian Network for Mood and Anxiety Treatments (CANMAT) task force recommendations for the management of patients with mood disorders and substance misuse. *Annals of Clinical Psychiatry,* 24, 38-55.

Bond, F. W. & Bunce, D. (2003). The role of acceptance and job control in mental health, job satisfaction and work performance. *Journal of Applied Psychology*, 88, 1057-1067.

Bond, F. W., Hayes, S. C., Baer, R. A., Carpenter, K. M., Guenole, N., Orcutt, H. K., & Zettle, R. D. (2011). Preliminary psychometric properties of the Acceptance and Action Questionnaire–II: A revised measure of psychological inflexibility and experiential avoidance. *Behavior Therapy*, *42*(4), 676-688.

Bond, F. W., Lloyd, J., & Guenole, N. (2013). Preliminary psychometric properties of the work related acceptance and action questionnaire. *Journal of Occupational and Organizational Psychology,* 86, 331–347.

Cash, M., & Whittingham, K. (2010). What facets of mindfulness contribute to psychological well-being and depressive, anxious, and stress related symptomology? *Mindfulness,* 1, 177-182.

Cattell, R. B. (1966). The scree test for the number of factors. *Multivariate Behavioral Research*, *1*, 245-276.

Ciarrochi, J., Bilich, L., & Godsell, C. (2010). Psychological flexibility as a mechanism of change in Acceptance and Commitment Therapy. In Ruth Baer's (Ed), *Assessing Mindfulness and Acceptance: Illuminating the Processes of Change.* (pp. 51-76). New Harbinger Publications, Inc.: Oakland, CA.

Ciarrochi, J., Kashdan, T. B., & Harris, R. (2013). *The Foundations of Flourishing. In* T. B, Kashdan & J. Ciarrochi (Eds.), *Mindfulness, acceptance and positive psychology* (pp 1-29). Oakland: Context Press.

Cohen, J. (1992). A power primer. *Psychological Bulletin*, 112, 155-159.

Dalrymple, K. L., & Herbert, J. D. (2007). Acceptance and commitment therapy for generalized social anxiety disorder. A pilot study. *Behavior Modification,* 31, 543–568.

Field, A. (2013). Discovering statistics using IBM SPSS Statistics (4th ed). London: Sage Publications Ltd.

Forman, E.M., Herbert, J.D., Juarascio, A.S., Yeomans, P.Y., Zebell, J.A., Goetter, E.M. & Moitra, E. (2012). The Drexel defusion scale: A new measure of experiential distancing. *Journal of Contextual Behavioral Science, 1,* 55-65.

Friendly, M. (2008). Exploratory and Confirmatory Factor Analysis. [Powerpoint slides]. Retrieved from http://www.datavis.ca/courses/factor/efacfa-handout3-2x2.pdf.

Gilbert, P. (2009a). Introducing compassion-focussed therapy. *Advances in Psychiatric Treatment, 15*, 199 – 208.

Gilbert, P. (2009b). *The Compassionate Mind*. London: Constable Robinson and USA: New Harbinger.

Gilbert, P., Clarke M, Hempel S, Miles J.N.V.& Irons C. (2004).Criticizing and reassuring oneself: An exploration of forms style and reasons in female students. *British Journal of Clinical Psychology 43,* 31-50.

Gilbert, P. & Irons, C. (2005). Focused therapies and compassionate mind training for shame and self-attacking. In P. Gilbert (Ed.), *Compassion: Conceptualisations, research and use in psychotherapy* (pp. 263-325). London: Routledge.

Gillanders, D.T., Bolderston, H., Bond, F.W., Dempster, M., Flaxman, P.E, Campbell, L., … Remmington, B. (2014). The Development and Initial Validation of the Cognitive Fusion Questionnaire. *Behavior Therapy,* 45, 83-101.

Goodwin, H., Arcelus, J., Geach, N., & Meyer, C. (2014). Perfectionism and eating psychopathology among dancers: The role of high standards and self-criticism. *European Eating Disorders Review, 22*(5), 346-351.

Gratz, K. L., Bornovalova, M. A., Delany-Bumsey, A., Nick, B., & Lejuez, C. W. (2007). A laboratory based study of the relationship between childhood abuse and experiential avoidance among inner city substance users: The role of emotional nonacceptance. *Behaviour therapy, 38,* 256-268.

Hambrick, J.P., Rodebaugh, T.L., Balsis, S., Woods, C.M., Mendez, J.L., & Heimberg, R.G. (2010). Cross-ethnic measurement equivalence of measures of depression, social anxiety, and worry, *Assessment,* 17,155–171.

Harris, R. (2009). *ACT Made Simple: An Easy-To-Read Primer on Acceptance and Commitment Therapy.* Oakland, CA: New Harbinger.

Hayes, S. C., Barnes-Holmes, D., & Roche, B. (Eds) (2001). *Relational frame theory: A post-Skinnerian account of human language and cognition.* New York: Kluwer Academic/Plenum Publishers.

Hayes, S. C., Luoma, J., Bond, F., Masuda, A., & Lillis, J. (2006). Acceptance and Commitment Therapy: Model, processes, and outcomes. *Behaviour Research and Therapy, 44,* 1-25.

Hayes, S. C., Pistorello, J., & Levin, M. E. (2012) Acceptance and Commitment Therapy as a Unifed Model of Behavior Change. *The Counselling Psychologist, 40 (7),* 976-1002.

Hayes, S. C., Strosahl, K. D., & Wilson, K.G. (1999). Acceptance and commitment therapy: An experiential approach to behavior change. New York, NY: The Guilford Press.

Hutcheson, G., & Sofroniou, N. (1999). *The multivariate social scientist.* London: Sage.

Judd, C. M., & McClelland, G. H. (1998). Measurement. *Handbook of social psychology (Vol. 1, pp. 180-232)*. Boston: McGraw Hill.

Kabat-Zinn, J. (1994). Wherever you go there you are. New York, NY: Hyperion.

Kagan, J. (1988). The meanings of personality predicates. *American Psychologist*, 43, 614 - 620.

Kaiser, H. F. (1960). The application of electronic computers to factor analysis. *Educational and Psychological Measurement,* 20, 141-151.

Keyes, C. L. M. (2002). The mental health continuum: From languishing to flourishing in life. *Journal of Health and Social Research, 43*, 207-222.

Keyes, C. L. M., Wissing, M., Potgieter, J. P., Temane, M., Kruger, A., & van Rooy, S. (2008). Evaluation of the Mental Health Continuum Short Form (MHC-SF) in Setswana speaking South Africans*. Clinical Psychology and Psychotherapy, 15,* 181–192.

Kopala-Sibley, D.C., Zuroff, D.C., Russell, J.J., & Moskowitz, D.S. (2013). Understanding heterogeneity in social anxiety disorder: Dependency and self-criticism moderate fear responses to interpersonal cues. *British Journal of Clinical Psychology, 53*(2), 141-156.

Lamers, S.M.A., Westerhof, G.J., Bohlmeijer, E.T., ten Klooster, P.M., & Keyes, C.L.M. (2011). Evaluating the psychometric properties of the Mental Health Continuum-Short Form (MHC-SF). *Journal of Clinical Psychology, 67,* 99-110.

Larkin, P. & White, R. (2014). Development and validation of an assessment of psychological flexibility in response to self-attacking thoughts. DClinPsy Thesis. University of Glasgow.

Levin, M. E., MacLane, C., Daflos, S., Seeley, J. R., Hayes, S. C., Biglan, A. & Pistorello, J. (2014). Examining Psychological Inflexibility as a Transdiagnostic process across psychological disorders. *Journal of Contextual Behavioral Science, 3,* 155–163.

Luoma, J., Drake, C.E., Kohlenberg, B.S., & Hayes, S. C. (2011). Substance abuse and psychological flexibility: The development of a new measure. *Addiction Research and Theory,* 19(1), 3-13.

McCracken, L. M., Gutiérrez-Martínez, O., & Smyth, C. (2013). "Decentering" Reflects Psychological Flexibility in People With Chronic Pain and Correlates With Their Quality of Functioning. *Health Psychology*, 32(7), 820-823.

Mundt, J. C., Marks, I. M., Shear, M. K., & Griest, J. M. (2002). The Work and Social Adjustment Scale: a simple measure of impairment in functioning. *British Journal of Psychiatry,180*, 461-464.

Neff, K. D. (2003a). The development and validation of a scale to measure self-compassion. *Self and Identity*, *2*(3), 223-250.

Neff, K. D. (2003b). Self-compassion: An alternative conceptualization of a healthy attitude toward oneself. *Self and Identity, 2,* 85–101.

NHS Education for Scotland (2015). *The Matrix: A Guide to Delivering Evidence-Based Psychological Therapies in Scotland*. Scottish Government.

Nunnally, J. C. (1978). *Psychometric Theory.* New York: McGraw-Hill.

Nyklicek, I. & Kuijpers, K. F. (2008). Effects of mindfulness-based stress reduction intervention on psychological well-being and quality of life: is increased mindfulness indeed the mechanism? *Annals of Behavioural Medicine*, 35, 331-340.

Paulhus, D. L., & Vazire, S. (2007). The self-report method. In R. W. Robins, R. C. Fraley, and R. Krueger (Eds.), *Handbook of Research Methods in Personality Psychology* (pp. 224-239). New York: Guilford Press.

Ruiz. F. J. (2010). A review of acceptance and commitment therapy empirical evidence: Correlational, experimental psychopathology, component and outcome studies. *International Journal of Psychology and Psychological Therapy, 10(1)*, 125-162.

Rüsch, N., Schiel, S., Corrigan, P. W., Leihener, F., Jacob, G. A., Olschewski, M., … Bohus, M. (2008). Predictors of dropout from inpatient dialectical behavior therapy among women with borderline personality disorder. *Journal of Behavior Therapy and Experimental Psychiatry*, 39, 497–503.

Sandoz E. K., Wilson K. G., Merwin R. M., & Kellum K. K. (2013). Assessment of body image flexibility: the body image-acceptance and action questionnaire *Journal of Contextual and Behavioural Science,* 2, 39–48.

Schwarz, N. (1999). Self-reports: How the questions shape the answers. *American Psychologist,* 54, 93-105.

Smout, M., Davies, M., Burns, N., & Christies, A. (2014). Development of the Valuing Questionnaire (VQ). *Journal of Contextual Behaviral Science,* 3, 164-172.

Snaith, R. P., & Zigmond, A. S. (1994). HADS: Hospital Anxiety and Depression Scale. 1994. *Windsor: NFER Nelson*.

Teasdale, J.D., Segal, Z.V. & Williams, J.G. (2003), "Mindfulness training and problem formulation", *Clinical Psychology: Science and Practice*, Vol. 10 No. 2, pp. 157-160.

Thurstone, L. L. (1947). *Multiple factor analysis*. Chicago, IL: University of Chicago Press.

Yamaguchi, A., & Kim, M. (2013). Effects of Self-Criticism and Its Relationship with Depression Across Cultures. *International Journal of Psychological Studies, 5*(1), 1-10.

White, R. G. (2013). *Treating depression in psychosis: self-compassion as a valid life direction.* In B. Gaudiano (Ed.) Incorporating Acceptance and Mindfulness into the treatment of Psychosis: Current Trends and Future Directions. Oxford University Press.

White, R. G., Gumley, A. I., McTaggart, J., Rattrie, L., McConville, D., Cleare, S., & Mitchell, G. (2012). Depression and anxiety following psychosis: associations with mindfulness and psychological flexibility. *Behavioural and Cognitive Psychotherapy,* 1, 1–18.

Wilson, K. G., & DuFrene, T. (2009). *Mindfulness for Two: An Acceptance and Commitment Therapy Approach to Mindfulness in Psychotherapy.* Oakland, CA: New Harbinger

APPENDICES

APPENDIX 1.1: Author Guidelines for Clinical Psychology Review

CLINICAL PSYCHOLOGY REVIEW

AUTHOR INFORMATION PACK

TABLE OF CONTENTS

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DESCRIPTION

Clinical Psychology Review publishes substantive reviews of topics germane to **clinical psychology.** Papers cover diverse issues including: psychopathology, psychotherapy, behavior therapy, cognition and cognitive therapies, behavioral medicine, community mental health, assessment, and child development. Papers should be cutting edge and advance the science and/or practice of clinical psychology.

Reviews on other topics, such as psychophysiology, learning therapy, experimental psychopathology, and social psychology often appear if they have a clear relationship to research or practice in **clinical psychology.** Integrative literature reviews and summary reports of innovative ongoing clinical research programs are also sometimes published. Reports on individual research studies and theoretical treatises or clinical guides without an empirical base are not appropriate.

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APPENDIX 1.2: Cochrane Collaboration's tool for assessing risk of bias (adapted from Higgins, Altman & Sterne, 2011)

Bias domain	Source of bias	Support for judgment	Review authors' judgment (assess as low, unclear or high risk of bias)
Selection bias	Random sequence generation	Describe the method used to generate the allocation sequence in sufficient detail to allow an assessment of whether it should produce comparable groups	Selection bias (biased allocation to interventions) due to inadequate generation of a randomised sequence
	Allocation concealment	Describe the method used to conceal the allocation sequence in sufficient detail to determine whether intervention allocations could have been foreseen before or during enrolment	Selection bias (biased allocation to interventions) due to inadequate concealment of allocations before assignment
Performance bias	Blinding of participants and personnel*	Describe all measures used, if any, to blind trial participants and researchers from knowledge of which intervention a participant received. Provide any information relating to whether the intended blinding was effective	Performance bias due to knowledge of the allocated interventions by participants and personnel during the study
Detection bias	Blinding of outcome assessment*	Describe all measures used, if any, to blind outcome assessment from knowledge of which intervention a participant received. Provide any information relating to whether the intended blinding was effective	Detection bias due to knowledge of the allocated interventions by outcome assessment
Attrition bias	Incomplete outcome data*	Describe the completeness of outcome data for each main outcome, including attrition and exclusions from the analysis. State whether attrition and exclusions were reported, the numbers in each intervention group (compared with total randomised participants), reasons for attrition or exclusions where reported, and any reinclusions in analyses for the review	Attrition bias due to amount, nature, or handling of incomplete outcome data
Reporting bias	Selective reporting	State how selective outcome reporting was examined and what was found	Reporting bias due to selective outcome reporting
Other bias	Anything else, ideally pre-specified	State any important concerns about bias not covered in the other domains in the tool	Bias due to problems not covered elsewhere

*Assessments should be made for each main outcome or class of outcomes.

APPENDIX 1.3: Criteria for judging risk of bias in the 'Risk of bias' assessment tool

RANDOM SEQUENCE GENERATION : **Selection bias (biased allocation to interventions) due to inadequate generation of a randomised sequence.**	
Criteria for a judgement of 'Low risk' of bias.	The investigators describe a random component in the sequence generation process such as: • Referring to a random number table; • Using a computer random number generator; • Coin tossing; • Shuffling cards or envelopes; • Throwing dice; • Drawing of lots; • Minimization*. *Minimization may be implemented without a random element, and this is considered to be equivalent to being random.
Criteria for the judgement of 'High risk' of bias.	The investigators describe a non-random component in the sequence generation process. Usually, the description would involve some systematic, non-random approach, for example: • Sequence generated by odd or even date of birth; • Sequence generated by some rule based on date (or day) of admission; • Sequence generated by some rule based on hospital or clinic record number. Other non-random approaches happen much less frequently than the systematic approaches mentioned above and tend to be obvious. They usually involve judgement or some method of non-random categorization of participants, for example: • Allocation by judgement of the clinician; • Allocation by preference of the participant; • Allocation based on the results of a laboratory test or a series of tests; • Allocation by availability of the intervention.
Criteria for the judgement of 'Unclear risk' of bias.	Insufficient information about the sequence generation process to permit judgement of 'Low risk' or 'High risk'.
ALLOCATION CONCEALMENT : **Selection bias (biased allocation to interventions) due to inadequate concealment of allocations prior to assignment.**	
Criteria for a judgement of 'Low risk' of bias.	Participants and investigators enrolling participants could not foresee assignment because one of the following, or an equivalent method, was used to conceal allocation: • Central allocation (including telephone, web-based and pharmacy-controlled randomization); • Sequentially numbered drug containers of identical appearance; • Sequentially numbered, opaque, sealed envelopes.

Criteria for the judgement of 'High risk' of bias.	Participants or investigators enrolling participants could possibly foresee assignments and thus introduce selection bias, such as allocation based on: • Using an open random allocation schedule (e.g. a list of random numbers); • Assignment envelopes were used without appropriate safeguards (e.g. if envelopes were unsealed or nonopaque or not sequentially numbered); • Alternation or rotation; • Date of birth; • Case record number; • Any other explicitly unconcealed procedure.
Criteria for the judgement of 'Unclear risk' of bias.	Insufficient information to permit judgement of 'Low risk' or 'High risk'. This is usually the case if the method of concealment is not described or not described in sufficient detail to allow a definite judgement – for example if the use of assignment envelopes is described, but it remains unclear whether envelopes were sequentially numbered, opaque and sealed.
BLINDING OF PARTICIPANTS AND PERSONNEL: **Performance bias due to knowledge of the allocated interventions by participants and personnel during the study.**	
Criteria for a judgement of 'Low risk' of bias.	Any one of the following: • No blinding or incomplete blinding, but the review authors judge that the outcome is not likely to be influenced by lack of blinding; • Blinding of participants and key study personnel ensured, and unlikely that the blinding could have been broken.
Criteria for the judgement of 'High risk' of bias.	Any one of the following: • No blinding or incomplete blinding, and the outcome is likely to be influenced by lack of blinding; • Blinding of key study participants and personnel attempted, but likely that the blinding could have been broken, and the outcome is likely to be influenced by lack of blinding.
Criteria for the judgement of 'Unclear risk' of bias.	Any one of the following: • Insufficient information to permit judgement of 'Low risk' or 'High risk'; • The study did not address this outcome.
BLINDING OF OUTCOME ASSESSMENT: **Detection bias due to knowledge of the allocated interventions by outcome assessors.**	
Criteria for a judgement of 'Low risk' of bias.	Any one of the following: • No blinding of outcome assessment, but the review authors judge that the outcome measurement is not likely to be influenced by lack of blinding; • Blinding of outcome assessment ensured, and unlikely that the blinding could have been broken.
Criteria for the judgement of 'High risk' of bias.	Any one of the following: • No blinding of outcome assessment, and the outcome measurement is likely to be influenced by lack of blinding;

	• Blinding of outcome assessment, but likely that the blinding could have been broken, and the outcome measurement is likely to be influenced by lack of blinding.
Criteria for the judgement of 'Unclear risk' of bias.	Any one of the following: • Insufficient information to permit judgement of 'Low risk' or 'High risk'; • The study did not address this outcome.
INCOMPLETE OUTCOME DATA : **Attrition bias due to amount, nature or handling of incomplete outcome data.**	
Criteria for a judgement of 'Low risk' of bias.	Any one of the following: • No missing outcome data; • Reasons for missing outcome data unlikely to be related to true outcome (for survival data, censoring unlikely to be introducing bias); • Missing outcome data balanced in numbers across intervention groups, with similar reasons for missing data across groups; • For dichotomous outcome data, the proportion of missing outcomes compared with observed event risk not enough to have a clinically relevant impact on the intervention effect estimate; • For continuous outcome data, plausible effect size (difference in means or standardized difference in means) among missing outcomes not enough to have a clinically relevant impact on observed effect size; • Missing data have been imputed using appropriate methods.
Criteria for the judgement of 'High risk' of bias.	Any one of the following: • Reason for missing outcome data likely to be related to true outcome, with either imbalance in numbers or reasons for missing data across intervention groups; • For dichotomous outcome data, the proportion of missing outcomes compared with observed event risk enough to induce clinically relevant bias in intervention effect estimate; • For continuous outcome data, plausible effect size (difference in means or standardized difference in means) among missing outcomes enough to induce clinically relevant bias in observed effect size; • 'As-treated' analysis done with substantial departure of the intervention received from that assigned at randomization; • Potentially inappropriate application of simple imputation.
Criteria for the judgement of 'Unclear risk' of bias.	Any one of the following: • Insufficient reporting of attrition/exclusions to permit judgement of 'Low risk' or 'High risk' (e.g. number randomized not stated, no reasons for missing data provided); • The study did not address this outcome.
SELECTIVE REPORTING : **Reporting bias due to selective outcome reporting.**	
Criteria for a judgement of 'Low risk' of bias.	Any of the following:

	• The study protocol is available and all of the study's pre-specified (primary and secondary) outcomes that are of interest in the review have been reported in the pre-specified way; • The study protocol is not available but it is clear that the published reports include all expected outcomes, including those that were pre-specified (convincing text of this nature may be uncommon).
Criteria for the judgement of 'High risk' of bias.	Any one of the following: • Not all of the study's pre-specified primary outcomes have been reported; • One or more primary outcomes is reported using measurements, analysis methods or subsets of the data (e.g. subscales) that were not pre-specified; • One or more reported primary outcomes were not pre-specified (unless clear justification for their reporting is provided, such as an unexpected adverse effect); • One or more outcomes of interest in the review are reported incompletely so that they cannot be entered in a meta-analysis; • The study report fails to include results for a key outcome that would be expected to have been reported for such a study.
Criteria for the judgement of 'Unclear risk' of bias.	Insufficient information to permit judgement of 'Low risk' or 'High risk'. It is likely that the majority of studies will fall into this category.
OTHER BIAS : **Bias due to problems not covered elsewhere in the table.**	
Criteria for a judgement of 'Low risk' of bias.	The study appears to be free of other sources of bias.
Criteria for the judgement of 'High risk' of bias.	There is at least one important risk of bias. For example, the study: • Had a potential source of bias related to the specific study design used; or • Has been claimed to have been fraudulent; or • Had some other problem.
Criteria for the judgement of 'Unclear risk' of bias.	There may be a risk of bias, but there is either: • Insufficient information to assess whether an important risk of bias exists; or • Insufficient rationale or evidence that an identified problem will introduce bias.

APPENDIX 1.4: Description of standardised well-being measures (Table taken from Schrank et al, 2013).

Scale name	Brief description of constituent factors and domains	Established psychometric properties	Primary outcome measure (*N* studies)	Secondary outcome measure (*N* studies)
Subjective Satisfaction with Life Scale (SSLS)	Four domains: living situation, social relationships, work, self and present life.	Yes	0	2
WHOQOL-BREF	Four dimensions: psychological well-being (or health), physical health, social relationships, environment; plus overall quality of life	Yes	0	2
Lancashire Quality of Life Profile (LQoLP)	Eight life domains: work, leisure, social involvement, finances, living situation, legal and safety, health, and family relations; plus general well-being.	Yes	0	1
Yu quality of life for mental illness scale	Eight factors: life satisfaction, autonomy, health maintenance, family support, function, social activity, physical health, psychological welling	No	0	1
Short Form (SF)	Six or eight factors depending on version: physical functioning, role limitations due to physical health problems, bodily pain, social functioning, general mental health, role limitations because of emotional problems, vitality, health perception	Yes	0	1
Manchester Assessment of Quality of Life (MANSA)	Eight life domains: job, finances, friendships, leisure activities, accommodation, safety, physical health, mental health; plus general life satisfaction	Yes	0	1
Lehman Quality of Life Interview (LQOL)	Eight life domains: living situation, family, social relations, leisure, work, safety, finances, physical health; plus general life satisfaction	Yes	0	4
Quality of Life Enjoyment and Satisfaction Questionnaire (Q-LES-Q)	Five life domains: physical health, subjective feelings, leisure time activities, social relationships, general activities; plus overall life satisfaction	Yes	0	2
Subjective Well-being under Neuroleptics Scale (SWN)	Five subscales: emotional regulation, mental functioning, self-control, social integration, physical functioning	Yes	0	2
Psychological General Well-being Index (PGWI)	Six affective states equal six subscales: anxiety, depressed mood, positive well-being, self-control, general health, vitality	Yes	0	2

Scale name	Brief description of constituent factors and domains	Established psychometric properties	Primary outcome measure (*N* studies)	Secondary outcome measure (*N* studies)
Social Adjustment Scale II (SAS-II)	Eight subscales: work role, household role, parental role, external family role, conjugal and nonconjugal sexual roles, romantic involvement, social and leisure activities, personal well-being	Yes	0	1
Ryff's Scales of psychological well-being (RSPW)	Six factors in the original scale (shorter version partly differ): environmental mastery, personal growth, self-acceptance, autonomy, purpose in life, positive relations with others	Yes	0	2
Scale for the Assessment of Well-Being (SAWB)	No sub-dimension, scale asks for 56 pairs of opposite feelings/mental states	Yes	0	1
Snaith–Hamilton Pleasure Scale (SHPS)	Four domains: interest/pastimes, social interaction, sensory experience, food/drink	Yes	1	0
Personal Well-being Index (PWI)	Eight life domains: standard of living, health, achievement in life, personal relationships, personal safety, community-connectedness, future security, spirituality	Yes	0	2
Life Satisfaction Index (LSI)	Five components: zest, resolution and fortitude, congruence among desired and achieved goals, a positive self-concept, mood tone	Yes	0	1
Subjective Exercise Experiences Scale (SEES)	Three subscales: psychological distress, subjective positive well-being, fatigue	Yes	2	0
Quality of Life Inventory (QOLI)	Satisfaction in eight areas: self-esteem, health, friends, relatives, money, work, play, love	Yes	0	1
General life satisfaction (LS)	Single question	n.a.	0	1
Enjoyment (ENJ)	Single question	n.a.	0	1

APPENDIX 2.1: Author Guidelines for Journal of Contextual and Behavioural Science

JOURNAL OF CONTEXTUAL BEHAVIORAL SCIENCE

ELSEVIER

AUTHOR INFORMATION PACK

TABLE OF CONTENTS

ISSN: 2212-1447

DESCRIPTION

The *Journal of Contextual Behavioral Science* is the official journal of the Association for Contextual Behavioral Science (ACBS).

Contextual Behavioral Science is a systematic and pragmatic approach to the understanding of **behavior**, the solution of human problems, and the promotion of human growth and development. Contextual Behavioral Science uses functional principles and theories to analyze and modify action embedded in its historical and situational context. The goal is to predict and influence behavior, with precision, scope, and depth, across all behavioral domains and all levels of analysis, so as to help create a **behavioral science** that is more adequate to the challenge of the human condition.

JCBS welcomes **contextual behavioral analyses** of phenomena that are relevant to the aims and scope of the society's mission, which is to change behavior at an individual or cultural level, to alleviate human suffering, and to advance human wellbeing. *Contextual behavioral science* is a strategic approach to the analysis of human behavior that proposes the need for a multi-level (e.g. social factors, neurological factors, behavioral factors) and multi-method (e.g., time series analyses, cross-sectional, experimental...) exploration of contextual and manipulable variables relevant to the prediction and influence of **human behavior**. In addition it places a strong emphasis in theory development and the promotion of effective practices that link back to scientific principles.

The journal considers papers relevant to a contextual behavioral approach include empirical studies (without topical restriction - e.g., clinical psychology, psychopathology, education, organizational psychology, etc.), reviews (systematic reviews and meta-analyses are preferred), and conceptual and philosophical papers on contextual behavioral science. We are particularly interested in papers emphasizing the study of core behavioral processes that are relevant to a broad range of human problems, and thus not limited to certain populations. Conceptual papers selected for publication may address a broad range of topics but generally will focus on contextual and functional variables or the philosophical analysis of contextual behavioral science. Papers that challenge a contextual behavioral science approach are always welcome. Papers bridging different approaches (e.g., connecting behavioral approaches with cognitive views; or neurocognitive psychology; or evolutionary science) are particularly encouraged.

The journal publishes papers written by researchers, practitioners, and theoreticians from different intellectual traditions. What is distinctive is not a narrowly defined theory or set of applied methods but whether the methodology, conceptualization, or strategy employed is relevant to a contextual behavioral approach.

APPENDIX 2:2 SIMD Data

The Scottish Index for Multiple Deprivation (SIMD) 2012 was used to determine the degree of socioeconomic deprivation of the areas in which participants lived using the postcodes of participants.
(http://www.scotland.gov.uk/Topics/Statistics/SIMD/).
SIMD is recommended as an indicator of deprivation in Scotland by the Information Services Division in support of NHS Scotland and the Scottish Government of Health (Bishop, Clark, Harris, Stockton, & Sutton, 2004). Postcodes are organised into 6,505 datazones, each datazone contains around 350 households. The characteristics of each datazone, such as employment, education, skills and training, income, housing, health and crime, are used to attribute a SIMD score, which is ranked from 1 (most deprived) to 6,505 (least deprived). The characteristics data are derived from various sources, including; the Work and Pensions Longitudinal Study, NOMIS (a web-based database of labour market statistics), National Records of Scotland, local authorities and managers of mainstream grant-aided schools, General Register Office for Scotland, National Public Transport Data Repository, and Scottish Police Forces.
The SIMD 2012 was used in this research; it is the most recent SIMD dataset available, based on postcodes in the year 2012. SIMD quintiles for the general population were used, ranging from 1 (most deprived) to 5 (most affluent).

Bishop, J., Clark, D., Harris, V., Stockton, D., & Sutton, M. (2004). *Deprivation and urban rural measurements in ISD. Summary report*. Edinburgh, UK: ISD Geography, Population, Census and Deprivation Group.

QUESTIONNAIRE BOOKLET

VALIDATION OF THE FLEXIBILITY OF RESPONSES TO SELF-CRITICAL THOUGHTS SCALE (FoReST) WITHIN A CLINICAL POPULATION.

Please complete the information below before moving on to the questionnaires on the next page.

DEMOGRAPHIC INFORMATION

1. **GENDER**:…….
2. **AGE**:……
3. **POST CODE**:……
4. **MENTAL HEALTH TEAM** (Name/Location)……..
5. **ETHNICITY**:
   ❑ White ❑ Chinese ❑ South Asian ❑ Other Asian ❑ Black African ❑ Other Black
   ❑ Other……
6. **IN PAID EMPLOYMENT**?
   ❑ Yes (full time) ❑ Yes (part time) ❑ No ❑ No (Full time education)
7. **HOW WOULD YOU DESCRIBE YOUR MENTAL HEALTH DIFFICULTIES:** (tick all that apply)

   ❑ Depression/low mood
   ❑ Generalised Anxiety Disorder
   ❑ Social Anxiety/Social Phobia
   ❑ Panic with/without Agoraphobia
   ❑ Eating disorder
   ❑ Obsessive-compulsive disorder
   ❑ Trauma/PTSD
   ❑ Other……
   ❑ Self-harm and suicidal behaviours
   ❑ Sleep difficulties/Insomnia
   ❑ Psychosis
   ❑ Bipolar disorder
   ❑ Personality disorder
   ❑ Drug/Alcohol problems
   ❑ Anger
8. **MEDICATION** Are you on any medication for your mental health? If so please note below:
   ……

☐ **Please tick this box if you would like to be entered into our prize draw for a £50 Amazon voucher.**
Email/Telephone number to be contacted on:……

INSTRUCTIONS: Read each item and circle the reply which comes closest to how you have been feeling in the **past week**. Don't take too long over your replies: your immediate reaction to each item will probably be more accurate than a long, thought out response.

I feel tense or 'wound up':	
Most of the time	3
A lot of the time	2
Time to time, occasionally	1
Not at all	0

I still enjoy the things I used to enjoy:	
Definitely as much	0
Not quite so much	1
Only a little	2
Not at all	3

I get a sort of frightened feeling like something awful is about to happen:	
Very definitely and quite badly	3
Yes, but not too badly	2
A little, but it doesn't worry me	1
Not at all	0

I can laugh and see the funny side of things:	
As much as I always could	0
Not quite so much now	1
Definitely not so much now	2
Not at all	3

Worrying thoughts go through my mind:	
A great deal of the time	3
A lot of the time	2
From time to time but not too often	1
Only occasionally	0

I feel cheerful:	
Not at all	3
Not often	2
Sometimes	1
Most of the time	0

I can sit at ease and feel relaxed:	
Definitely	0
Usually	1
Not often	2
Not at all	3

I feel as if I am slowed down:	
Nearly all of the time	3
Very often	2
Sometimes	1
Not at all	0

I get a sort of frightened feeling like 'butterflies in the stomach':	
Not at all	0
Occasionally	1
Quite often	2
Very often	3

I have lost interest in my appearance:	
Definitely	3
I don't take as much care as I should	2
I may not take quite as much care	1
I take just as much care as ever	0

I feel restless as if I have to be on the move:	
Very much indeed	3
Quite a lot	2
Not very much	1
Not at all	0

I look forward with enjoyment to things:	
A much as I ever did	0
Rather less than I used to	1
Definitely less than I used to	3
Hardly at all	2

I get sudden feelings of panic:	
Very often indeed	3
Quite often	2
Not very often	1
Not at all	0

I can enjoy a good book or radio or TV programme:	
Often	0
Sometimes	1
Not often	2
Very seldom	3

Hospital Anxiety and Depression Scale- HADS (Snaith & Zigmond, 1994)

INSTRUCTIONS: Below you will find a list of statements. Please rate how true each statement is for you by circling a number next to it. Use the scale below to make your choice.

1	2	3	4	5	6	7
Never true	Very seldom true	Seldom true	Sometimes true	Frequently true	Almost always true	Always true

1.	My painful experiences and memories make it difficult for me to live a life that I would value.	1	2	3	4	5	6	7
2.	I'm afraid of my feelings.	1	2	3	4	5	6	7
3.	I worry about not being able to control my worries and feelings.	1	2	3	4	5	6	7
4.	My painful memories prevent me from having a fulfilling life.	1	2	3	4	5	6	7
5.	Emotions cause problems in my life.	1	2	3	4	5	6	7
6.	It seems like most people are handling their lives better than I am.	1	2	3	4	5	6	7
7.	Worries get in the way of my success.	1	2	3	4	5	6	7

Acceptance and Action Questionnaire- AAQ-II (Bond et al, 2011)

INSTRUCTIONS: People's problems sometimes affect their ability to do certain day-to-day tasks. Read each section and determine on the scale provided, how much your problem impairs your ability to carry out the activity.

0	1	2	3	4	5	6	7	8
Not at all		Slightly		Definitely		Markedly		Very severely

1.	**Work**- if you are retired or choose not to have a job for reasons unrelated to your problem, please tick here ☐	0	1	2	3	4	5	6	7	8
2.	**Home management**- cleaning, tidying, shopping, cooking, looking after home/children, paying bills etc	0	1	2	3	4	5	6	7	8
3.	**Social leisure activities**- with other people, e.g. parties, pubs, outings, entertaining etc	0	1	2	3	4	5	6	7	8
4.	**Private leisure activities**- done alone, e.g. reading, gardening, sewing, hobbies, walking etc	0	1	2	3	4	5	6	7	8
5.	**Families and relationships**- form and maintain close relationships with others including the people that I live with	0	1	2	3	4	5	6	7	8

Work and Social Adjustment Scale- WSAS (Mundt et al, 2002)

INSTRUCTIONS: Below you will find a list of statements. Please rate how true each statement is for you by circling a number next to it. Use the scale below to make your choice.

1	2	3	4	5	6	7
Never true	Very seldom true	Seldom true	Sometimes true	Frequently true	Almost always true	Always true

When I have a critical thought about myself….

1. ....It makes me lose control of my behaviour	1	2	3	4	5	6	7
2. ….I do things I later regret	1	2	3	4	5	6	7
3. ….I feel so disgusted at myself that I don't act the way I should	1	2	3	4	5	6	7
4. ….I feel so ashamed that I don't act the way I should	1	2	3	4	5	6	7
5. ….I don't treat others the way I would like	1	2	3	4	5	6	7
6. ….I act in a way that makes life more difficult for me	1	2	3	4	5	6	7
7. ….I don't treat myself the way I would like	1	2	3	4	5	6	7
8. ….It gets me so down that I don't act the way I should	1	2	3	4	5	6	7
9. ….I try to ignore it.	1	2	3	4	5	6	7
10. ….I try not to think about it	1	2	3	4	5	6	7
11. ….I try to block out any feelings it creates	1	2	3	4	5	6	7
12. ….I pretend it's not there	1	2	3	4	5	6	7

The Flexibility of Responses to Self-critical Thoughts Scale- FoReST-12

INSTRUCTIONS: Below you will find a list of statements that explain how you typically act towards yourself in difficult times. Please rate how true each statement is for you by circling a number next to it. Use the scale below to make your choice.

1	2	3	4	5
Almost never	**Occasionally**	**Sometimes**	**Frequently**	**Almost always**

1.	When I fail at something important to me I become consumed by feelings of inadequacy	**1**	**2**	**3**	**4**	**5**
2.	I try to be understanding and patient towards those aspects of my personality I don't like	**1**	**2**	**3**	**4**	**5**
3.	When something painful happens I try to take a balanced view of the situation	**1**	**2**	**3**	**4**	**5**
4.	When I'm feeling down, I tend to feel like most other people are probably happier than I am	**1**	**2**	**3**	**4**	**5**
5.	I try to see my failings as part of the human condition	**1**	**2**	**3**	**4**	**5**
6.	When I'm going through a very hard time, I give myself the caring and tenderness I need	**1**	**2**	**3**	**4**	**5**
7.	When something upsets me I try to keep my emotions in balance	**1**	**2**	**3**	**4**	**5**
8.	When I fail at something that's important to me, I tend to feel alone in my failure	**1**	**2**	**3**	**4**	**5**
9.	When I'm feeling down I tend to obsess and fixate on everything that's wrong	**1**	**2**	**3**	**4**	**5**
10.	When I feel inadequate in some way, I try to remind myself that feelings of inadequacy are shared by most people	**1**	**2**	**3**	**4**	**5**
11.	I'm disapproving and judgmental about my own flaws and inadequacies	**1**	**2**	**3**	**4**	**5**
12.	I'm intolerant and impatient towards those aspects of my personality I don't like	**1**	**2**	**3**	**4**	**5**

***Self-Compassion Scale- SCS-SF (Neff et al, 2003)*.**

INSTRUCTIONS: The following questions are about how you have been feeling during the **past month**. Place a tick in the box that best represents how often you have experienced or felt the following:

During the **past month**, how often did you feel…..	Never	Once or Twice	About once a week	About 2 or 3 times a week	Almost every day	Everyday
1. ….Happy						
2. ….Interested in life						
3. ….Satisfied with life						
4…..That you had something important to contribute to society						
5. ….That you belonged to a community (like a social group or neighbourhood)						
6…..That our society is a good place, or is becoming a better place						
7…..That people are basically good						
8. ….That the way our society works makes sense to you						
9. ….That you liked most parts of your personality						
10…..Good at managing the responsibilities of your daily life						
11…..That you had warm and trusting relationships with others						
12. ….That you had experiences that challenged you to grow and become a better person						
13…..Confident to think or express your own ideas and opinions						
14. ….That your life has a sense of direction or meaning to it						

Mental Health Continuum-Short Form- MHC-SF (Keyes et al., 2008)

INSTRUCTIONS: Below you will find a list of statements. Please rate how true each statement is for you by circling a number next to it. Use the scale below to make your choice.

0	1	2	3	4
Not at all like me	A little bit like me	Moderately like me	Quite a bit like me	Extremely like me

When things go wrong for me……

1.	….I am easily disappointed with myself.	0	1	2	3	4
2.	….There is a part of me that puts me down.	0	1	2	3	4
3.	….I am able to remind myself of positive things about myself.	0	1	2	3	4
4.	….I find it difficult to control my anger and frustration at myself.	0	1	2	3	4
5.	….I find it easy to forgive myself.	0	1	2	3	4
6.	….There is a part of me that feels I am not good enough.	0	1	2	3	4
7.	….I feel beaten down by my own self-critical thoughts.	0	1	2	3	4
8.	….I still like being me.	0	1	2	3	4
9.	….I have become so angry with myself that I want to hurt or injure myself.	0	1	2	3	4
10.	….I have a sense of disgust with myself.	0	1	2	3	4
11.	….I can still feel lovable and acceptable.	0	1	2	3	4
12.	….I stop caring about myself.	0	1	2	3	4
13.	….I find it easy to like myself.	0	1	2	3	4
14.	….I remember and dwell on my failings.	0	1	2	3	4
15.	….I call myself names.	0	1	2	3	4
16.	….I am gentle and supportive with myself.	0	1	2	3	4
17.	….I can't accept failures and setbacks without feeling inadequate.	0	1	2	3	4
18.	….I think I deserve my self-criticism.	0	1	2	3	4
19.	….I am able to care and look after myself.	0	1	2	3	4
20.	….There is a part of me that wants to get rid of the bits I don't like.	0	1	2	3	4
21.	….I encourage myself for the future.	0	1	2	3	4
22.	….I do not like being me.	0	1	2	3	4

University of Glasgow
Institute of Health & Wellbeing

NHS Greater Glasgow and Clyde

Staff Information Sheet

Title of Study:

VALIDATION OF THE FLEXIBILITY OF RESPONSES TO SELF-CRITICAL THOUGHTS SCALE (FoReST) WITHIN A CLINICAL POPULATION

Thank you for helping out with the above study. As explained, this is a validation study for a new questionnaire that has been developed to measure how people respond to self-critical thoughts. To take part participants will be asked to complete a booklet of questionnaires that will take approximately *15 minutes*.

WHO CAN TAKE PART?

Inclusion Criteria

- Patients attending a PCMHT or CMHT within NHS Greater Glasgow and Clyde or Psychological Therapy Teams in NHS Lanarkshire.
- Patients over the age of 17 years.

Exclusion criteria

- Patients with a Learning disability or Cognitive Impairment.
- Patients who are unable to understand written English (need reading age of 8 years and above).
- Patients with a Severe and Enduring Mental illness, for example, psychosis.

*****Research packs should only be provided to patients who meet the criteria above*****

- After providing a patient with the Research pack, it is important that they understand what is required of them and have the opportunity to ask questions. Please direct them to the Lead researcher if these questions cannot be answered by yourself.
- You need to complete a signed **Consent form x2** with the participant before they take part. The participant keeps 1 copy and 1 copy is forwarded on to the lead researcher.
- Encourage the participant to take their time to fill out the questionnaires, either by completing in the waiting room, at home or by visiting the online link.
- Be sure to let the Patient know that even if they have given consent they can still choose not to complete and return the questionnaires and are free to opt out of the study at anytime.

Patient ID: ☐

University of Glasgow
Institute of Health & Wellbeing

NHS Greater Glasgow and Clyde

APPENDIX 2.5: Participant Consent Form

Participant Consent Form

TITLE OF STUDY: **VALIDATION OF THE FLEXIBILITY OF RESPONSES TO SELF-CRITICAL THOUGHTS SCALE (FoReST) WITHIN A CLINICAL POPULATION.**

Please read the participant information sheet before completing this consent form. If you have any further questions about the study, or about this form, please contact the researcher (contact details are provided above).
Please initial box

1. I confirm that I have read and understood the information sheet dated 25th Jan 2016 (Version 2.1) for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily. ☐

2. I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason, without my medical care or legal rights being affected. ☐

3. I understand that my personal information may be looked at by the research team and members of the regulatory authorities where it is relevant to my taking part in this research. ☐

4. I agree to participate in the above study. ☐

Name of Participant	Date	Signature

Name of Person taking consent	Date	Signature

(When completed: 1 for participant; 1 for researcher site file)

University of Glasgow
Institute of Health & Wellbeing

NHS Greater Glasgow and Clyde

PARTICIPANT INFORMATION SHEET

Title of Study: **Validation of the Flexibility of Responses to Self-Critical Thoughts Scale (FoReST) within a clinical population.**

We would like to invite you to take part in a research study. Before you decide, it is important for you to understand why the research is being done and what it will involve. Please take the time to read this information sheet carefully. If there is anything that is not clear or if you would like more information please get in touch using the contact details provided above.

Who is conducting this study?
The research is being carried out by Judith McCluskey, Trainee Clinical Psychologist at the University of Glasgow.

What is the purpose of this study?
Research has shown that our thoughts can affect how we feel and how we behave. Thoughts can be very powerful and cause a unique response in every individual. New research has begun to show that there is a link between how we respond to certain thoughts and the impact on our mental health. This research will add to the continued evaluation of a new measure, which is unique in exploring the relationship that people have with their self-critical thoughts.

Why have I been invited?
Individuals attending Primary Care or Community Mental Health Teams within NHS Greater Glasgow and Clyde and Psychological Therapy Teams in NHS Lanarkshire are being invited to participate in this study.

Do I have to take part?
No. Taking part is entirely up to you. If you do not wish to take part it will not affect any treatment that you currently receive. Also, if you do decide to take part, you are able to change your mind and withdraw from the study at any time without it affecting your care either now or in the future.

What is involved if I take part?
The study involves the completion of a booklet containing 7 short questionnaires. These questionnaires will ask a variety of questions about the different thoughts and feelings that you have about yourself, your overall quality of life and how you typically act in different situations. This will take approximately 15 minutes, and a paper version can be completed immediately after your appointment in the waiting area or at home. Alternatively, an online version is available using the Internet link provided at the end of this information sheet.

If I do decide to take part, what happens next?
If you decide to take part in the study your clinician will first arrange for you to complete a consent form. This form requires your signature to confirm that you have read the information about the study and agree to take part. You can then begin to complete the questionnaire booklet. The first page of the booklet contains some demographic information and then 7 short questionnaires. Once you have completed all the questionnaires you will be able to place your booklet in the freepost envelope provided, and leave it with reception staff or your clinician. If you choose to complete the booklet outwith NHS premises, you can use the freepost envelope and return it any time before June 2016. For those wishing to complete the online survey full instructions are provided via the Internet link below. You may contact Judith McCluskey, at any time, if you need further information or guidance to support you through this process.

Would my results be kept confidential?
Yes. The information you provide will be treated confidentially. It may be looked at by the study Sponsor, NHS GG&C or the regulatory authorities to ensure the study is being conducted correctly. The information you give will be anonymous so that your name will not be attached to any questionnaires, instead a participant number will be assigned. Your name and any information that could identify you will not appear in any reports. Taking part will not affect any current treatment that you may be receiving or that you are about to receive. In addition, your answers to questions will be kept entirely confidential and will not be used to inform your relationship with your mental health worker.

What are the possible risks of taking part?
There is a risk that completing questionnaires asking about thoughts and feelings may stir up some unwanted emotions. It is important that you consider this before deciding whether to take part. If you decide to participate, you are free to withdraw at any time, without giving reason if you change your mind. There is a debrief form within the pack which provides the contact details of supportive agencies should you require it.

What are the possible benefits of taking part?
This study aims to enhance understanding of critical thoughts that we can have about ourselves. This can provide you with an opportunity to reflect on some of these thoughts and may lead to increased knowledge and understanding. You will also be given the opportunity to enter into a prize draw for a £50 Amazon gift voucher.

What will happen to the results of the study?
Once the study is completed we will produce a report that will describe the findings of the study. This report will be submitted by Judith McCluskey, Lead Researcher as part of her Doctorate in Clinical Psychology from the University of Glasgow. If published, the results will be obtainable in an academic journal and may also be presented at scientific meetings or conferences. You will not be identified in any

report or publication. The report will not include any personal details of the people who took part.

Who is organising and funding the research?
The University of Glasgow and NHS Greater Glasgow & Clyde will organise the research. The University of Glasgow will fund the study.

Who has reviewed the study?
The study has been reviewed by the University of Glasgow to ensure that it meets standards of scientific conduct. It has also been reviewed by the Research and Development Department in NHS Greater Glasgow and Clyde. The West of Scotland Research Ethics Committee has also reviewed the study to ensure that it meets standards of ethical conduct.

What can I do if I am unhappy with any aspect of my participation in the study?
We value the time you will take to participate in the study and will try to ensure you are comfortable with all aspects of your participation. If you have any concerns about the study or the way it is conducted or if you want to complain about any aspect of this study, please contact the Chief Investigator, Dr Ross White, Mental Health and Wellbeing, Gartnavel Royal Hospital, 1st Floor, Admin Building, University of Glasgow, Glasgow G12 0XH in the first instance. The normal NHS complaint mechanisms will also be available to you.

Internet link to complete research study online:

https://response.questback.com/nhsgreaterglasgowandclyde/forest

Thank you for considering taking part in this study. If you require any further information, we will be pleased to help you in any way we can.

Lead Researcher Contact Details
Judith McCluskey
Institute of Mental Health and Wellbeing
Gartnavel Royal Hospital,
1st Floor, Admin Building,
University of Glasgow,
Glasgow G12 0XH
0141 211 6716/ j.mccluskey.1@research.gla.ac.uk

Thank you for taking the time to complete these questionnaires.

We hope that it has been helpful for you to reflect on how you have been feeling over the past few weeks. However sometimes it can be difficult to answer questions that make us think about our critical thoughts and feelings. If completing these questionnaires has prompted a worry or concern please discuss this further with your mental health worker. You may also wish to contact your G.P or one of supportive organisations found below:

Available Supports

- *NHS 24* - Provides comprehensive up-to-date health information and health care advice for people living in Scotland. If your G.P surgery is closed and you can't wait until it opens, you can call NHS 24. They will direct you to the right care for you or the person you are calling for. This may be your local Health Board's out of hours services, Accident and Emergency department, or the Scottish Ambulance Service. The helpline is open 24 hours a day, 7 days a week. www.nhs24.com;
  Telephone: **111 (**For an emergency ambulance you should dial **999**)

- *SAMARITANS* – Samaritans is available 24 hours a day to provide free, confidential emotional support for people who are experiencing feelings of distress or despair. www.samaritans.org; Telephone: **116 123**

- *BREATHING SPACE* – Breathing space is a free and confidential phoneline service for any individual who is experiencing low mood or depression, or who is unusually worried and who may be in need of someone to talk to. Breathing Space operates from Monday – Thursday, between 6pm and 2am and Friday - Monday between 6pm - 6am. www.breathingspacescotland.co.uk; Telephone: **0800 83 85 87**

- *SCOTTISH ASSOCIATION FOR MENTAL HEALTH (SAMH)* – SAMH is a Scottish mental health charity, which operates from Monday to Friday, between the hours of 2pm and 5pm. The staff and volunteers can answer general mental health enquiries, offer debt advice, and signpost you to your local services. www.samh.org.uk; Telephone: **0800 917 34 66**

Lead Researcher Contact Details
Judith McCluskey
Institute of Mental Health and Wellbeing
Gartnavel Royal Hospital,
1st Floor, Admin Building,
University of Glasgow,
Glasgow G12 0XH
0141 211 6716/ j.mccluskey.1@research.gla.ac.uk

APPENDIX 2.8: West of Scotland Ethics letters

NHS
Greater Glasgow and Clyde

WoSRES
West of Scotland Research Ethics Service

West of Scotland REC 5
West of Scotland Research Ethics Service
West Glasgow Ambulatory Care Hospital
Dalnair Street
Glasgow
G3 8SW

Dr Ross White
1st Floor, Administration Building,
Gartnavel Royal Hospital,
1055 Great Western Road, Glasgow.
G12 OXH

Date 11 February 2016

Direct line 0141 232 1809
E-mail WoSREC5@ggc.scot.nhs.uk

Dear Dr White

Study title:	**Validation of the Flexibility of Responses to Self-Critical Thoughts Scale (FoReST) within a clinical population.**
REC reference:	**16/WS/0010**
IRAS project ID:	**186531**

Thank you for your letter of 27 January 2016, responding to the Committee's request for further information on the above research and submitting revised documentation.

The further information has been considered on behalf of the Committee by the Chair.

We plan to publish your research summary wording for the above study on the HRA website, together with your contact details. Publication will be no earlier than three months from the date of this opinion letter. Should you wish to provide a substitute contact point, require further information, or wish to make a request to postpone publication, please contact the REC Manager, Mrs Sharon Macgregor, WoSREC5@ggc.scot.nhs.uk.

Confirmation of ethical opinion

On behalf of the Committee, I am pleased to confirm a favourable ethical opinion for the above research on the basis described in the application form, protocol and supporting documentation as revised, subject to the conditions specified below.

Conditions of the favourable opinion

The REC favourable opinion is subject to the following conditions being met prior to the start of the study.

- In the Staff Information Sheet, in the first bullet point below the "Who can take part?" box, the second sentence should be changed to "Please direct them to the Lead Researcher if *these questions cannot* be answered by yourself."

You should notify the REC once all conditions have been met (except for site approvals from host organisations) and provide copies of any revised documentation with updated version numbers. Revised documents should be submitted to the REC electronically from IRAS. The REC will acknowledge receipt and provide a final list of the approved documentation for the study, which you can make available to host organisations to facilitate their permission for the study. Failure to provide the final versions to the REC may cause delay in obtaining permissions.

Management permission must be obtained from each host organisation prior to the start of the study at the site concerned.

Management permission should be sought from all NHS organisations involved in the study in accordance with NHS research governance arrangements. Each NHS organisation must confirm through the signing of agreements and/or other documents that it has given permission for the research to proceed (except where explicitly specified otherwise).

Guidance on applying for NHS permission for research is available in the Integrated Research Application System, www.hra.nhs.uk or at http://www.rdforum.nhs.uk.

Where a NHS organisation's role in the study is limited to identifying and referring potential participants to research sites ("participant identification centre"), guidance should be sought from the R&D office on the information it requires to give permission for this activity.

For non-NHS sites, site management permission should be obtained in accordance with the procedures of the relevant host organisation.

Sponsors are not required to notify the Committee of management permissions from host organisations

Registration of Clinical Trials

All clinical trials (defined as the first four categories on the IRAS filter page) must be registered on a publically accessible database within 6 weeks of recruitment of the first participant (for medical device studies, within the timeline determined by the current registration and publication trees).

There is no requirement to separately notify the REC but you should do so at the earliest opportunity e.g. when submitting an amendment. We will audit the registration details as part of the annual progress reporting process.

To ensure transparency in research, we strongly recommend that all research is registered but for non-clinical trials this is not currently mandatory.

If a sponsor wishes to contest the need for registration they should contact Catherine Blewett (catherineblewett@nhs.net), the HRA does not, however, expect exceptions to be made. Guidance on where to register is provided within IRAS.

It is the responsibility of the sponsor to ensure that all the conditions are complied with before the start of the study or its initiation at a particular site (as applicable).

Ethical review of research sites

NHS sites

The favourable opinion applies to all NHS sites taking part in the study, subject to management permission being obtained from the NHS/HSC R&D office prior to the start of the study (see "Conditions of the favourable opinion" below).

Approved documents

The final list of documents reviewed and approved by the Committee is as follows:

Document	*Version*	*Date*
Copies of advertisement materials for research participants [Advertising poster and Flier]	1.1	25 January 2016
GP/consultant information sheets or letters [Staff Information sheet]	1	02 January 2016
Other [REC response letter]	1	27 January 2016
Participant consent form [Participant consent form]	1	25 January 2016
Participant information sheet (PIS) [Participant Information sheet]	2.1	25 January 2016
Research protocol or project proposal [Research Proposal v7]	7.1	25 January 2016
Validated questionnaire [Questionnaire booklet v2]	2.1	25 January 2016

Statement of compliance

The Committee is constituted in accordance with the Governance Arrangements for Research Ethics Committees and complies fully with the Standard Operating Procedures for Research Ethics Committees in the UK.

After ethical review

Reporting requirements

The attached document *"After ethical review – guidance for researchers"* gives detailed guidance on reporting requirements for studies with a favourable opinion, including:

- Notifying substantial amendments
- Adding new sites and investigators
- Notification of serious breaches of the protocol
- Progress and safety reports
- Notifying the end of the study

The HRA website also provides guidance on these topics, which is updated in the light of changes in reporting requirements or procedures.

User Feedback

The Health Research Authority is continually striving to provide a high quality service to all applicants and sponsors. You are invited to give your view of the service you have received and the application procedure. If you wish to make your views known please use the feedback form available on the HRA website: http://www.hra.nhs.uk/about-the-hra/governance/quality-assurance/

HRA Training

We are pleased to welcome researchers and R&D staff at our training days – see details at http://www.hra.nhs.uk/hra-training/

16/WS/0010	**Please quote this number on all correspondence**

With the Committee's best wishes for the success of this project.

Yours sincerely

for
Dr Stewart Campbell
Chair

Enclosures: "After ethical review – guidance for researchers"

Copy to: Miss Emma-Jane Gault, University of Glasgow
Ms Elaine O'Neill, NHS Greater Glasgow and Clyde

WoSRES
West of Scotland Research Ethics Service

NHS
Greater Glasgow and Clyde

West of Scotland REC 5
West of Scotland Research Ethics Service
West Glasgow Ambulatory Care Hospital
Dalnair Street
Glasgow
G3 8SW

Date 11 February 2016

Direct line 0141 232 1809
E-mail WoSREC5@ggc.scot.nhs.uk

Miss Judith McCluskey
1st floor, Administration Building
Gartnavel Royal Hospital
1055 Great Western Road
GLASGOW
G12 0XH

Dear Miss McCluskey

Study title: **Validation of the Flexibility of Responses to Self-Critical Thoughts Scale (FoReST) within a clinical population.**
REC reference: **16/WS/0010**
IRAS project ID: **186531**

Thank you for your response received today. I can confirm the REC has received the documents listed below and that these comply with the approval conditions detailed in our letter dated 11 February 2016.

Documents received

The documents received were as follows:

Document	*Version*	*Date*
GP/consultant information sheets or letters [Staff Information sheet]	1.1	11 February 2016

Approved documents

The final list of approved documentation for the study is therefore as follows:

Document	*Version*	*Date*
Copies of advertisement materials for research participants [Advertising poster and Flier]	1.1	25 January 2016
GP/consultant information sheets or letters [Staff Information sheet]	1.1	11 February 2016
Other [Debrief sheet v1]	1	02 October 2015

Other [REC response letter]	1	27 January 2016
Participant consent form [Participant consent form]	1	25 January 2016
Participant information sheet (PIS) [Participant Information sheet]	2.1	25 January 2016
REC Application Form [REC_Form_22122015]		22 December 2015
Research protocol or project proposal [Research Proposal v7]	7.1	25 January 2016

Summary CV for student [Judith McCluskey CV]	1	04 December 2015
Validated questionnaire [Questionnaire booklet v2]	2.1	25 January 2016
Summary CV for Chief Investigator (CI) [Ross White CV]		04 December 2015

You should ensure that the sponsor has a copy of the final documentation for the study. It is the sponsor's responsibility to ensure that the documentation is made available to R&D offices at all participating sites.

16/WS/0010 **Please quote this number on all correspondence**

Yours sincerely

Sharon Macgregor
Committee Co-ordinator

Copy to: Dr Ross White, University of Glasgow
Miss Emma-Jane Gault, University of Glasgow
Ms Elaine O'Neill, NHS Greater Glasgow and Clyde

Administrator: Mrs Elaine O'Neill
Management Office
Telephone Number: 0141 232 1815
Glasgow ACH
E-Mail: elaine.o'neill2@ggc.scot.nhs.uk
Street
Website: www.nhsggc.org.uk/r&d
8SW

R&D
West
Dalnair
Glasgow G3

17 February 2016

Miss Judith McCluskey
Trainee Clinical Psychologist
Gartnavel Royal Infirmary
1055 Great Western Road
Glasgow G12 0XH

NHS GG&C Board Approval

Dear Miss J McCluskey,

Study Title:	**Validation of the Flexibility of Responses to Self-Critical Thoughts Scale (FoReST) within a clinical population**
Principal Investigator:	**Miss Judith McCluskey**
GG&C HB site	**Community Mental Health**
Sponsor	**NHS Greater Glasgow and Clyde**
R&D reference:	**GN15CP562**
REC reference:	**16/WS/0010**
Protocol no:	**V7.1; 25/01/16**

I am pleased to confirm that Greater Glasgow & Clyde Health Board is now able to grant **Approval** for the above study.

Conditions of Approval

- **For Clinical Trials** as defined by the Medicines for Human Use Clinical Trial Regulations, 2004 a. During the life span of the study GGHB requires the following information relating to this site

  Notification of any potential serious breaches.
  Notification of any regulatory inspections.

It is your responsibility to ensure that all staff involved in the study at this site have the appropriate GCP training according to the GGHB GCP policy (www.nhsggc.org.uk/content/default.asp?page=s1411), evidence of such training to be filed in the site file.

- **For all studies** the following information is required during their lifespan.
  Recruitment Numbers on a monthly basis
  Any change of staff named on the original SSI form
  Any amendments – Substantial or Non Substantial
  Notification of Trial/study end including final recruitment figures
  Final Report & Copies of Publications/Abstracts

Please add this approval to your study file as this letter may be subject to audit and monitoring.

Your personal information will be held on a secure national web-based NHS

database. I wish you every success with this research study

Yours sincerely,

Mrs Elaine O'Neill
Senior Research Administrator

Cc: Miss Emma-Jane Gault (University of Glasgow)
Dr Ross White (University of Glasgow

Dr Ross White
Senior Lecturer
1st Floor, Administration Building
Gartnavel Royal Hospital
1055 Great Western Road
Glasgow
G12 0XH

R&D Department
Corporate Services Building
Monklands Hospital
Monkscourt Avenue
AIRDRIE
ML6 0JS

Date 24.02.2016
Enquiries to Lorraine Quinn,
R&D Facilitator
Direct Line 01236 712445
Email lorraine.quinn@lanarkshire.scot.nhs.uk

Dear Dr White

Project title: Validation of the Flexibility of Responses to Self-Critical Thoughts Scale (FoReST) within a clinical population.

R&D ID: L15105

NRS ID Number: NRS15/186531

I am writing to you as Chief Investigator of the above study to advise that R&D Management approval has been granted for the conduct of your study within NHS Lanarkshire as detailed below:

NAME	TITLE	ROLE	NHSL SITE TO WHICH APPROVAL APPLIES
Miss Judith McCluskey	Trainee Clinical Psychologist	Principal Investigator	NHS Lanarkshire
Dr Garry Tanner	Clinical Director	Local Contact	NHS Lanarkshire

For the study to be carried out you are subject to the following conditions:

Conditions

- You are required to comply with Good Clinical Practice, Ethics Guidelines, Health & Safety Act 1999 and the Data Protection Act 1998.
- The research is carried out in accordance with the Scottish Executive's Research Governance Framework for

Health and Community Care (copy available via the Chief Scientist Office website: http://www.cso.scot.nhs.uk/ or the Research & Development Intranet site: http://firstport2/staff-support/research-and-development/default.aspx

- You must ensure that all confidential information is maintained in secure storage. You are further obligated under this agreement to report to the NHS Lanarkshire Data Protection Office and the

  Research & Development Office infringements, either by accident or otherwise, which constitutes a breach of confidentiality.

- Clinical trial agreements (if applicable), or any other agreements in relation to the study, have been signed off by all relevant signatories.

- You must contact the Lead Nation Coordinating Centre if/when the project is subject to any minor or substantial amendments so that these can be appropriately assessed, and approved, where necessary.

- You notify the R&D Department if any additional researchers become involved in the project within NHS Lanarkshire

- You notify the R&D Department when you have completed your research, or if you decide to terminate it prematurely.

- You must send brief annual reports followed by a final report and summary to the R&D office in hard copy and electronic formats as well as any publications.

- If the research involves any investigators who are not employed by NHS Lanarkshire, but who will be dealing with NHS Lanarkshire patients, there may be a requirement for an SCRO check and occupational health assessment. If this is the case then please contact the R&D Department to make arrangements for this to be undertaken and an honorary contract issued.

I trust these conditions are acceptable to you.

Yours sincerely,

Raymond Hamill – Corporate R&D Manager

cc.

NAME	TITLE	CONTACT ADDRESS	ROLE
Judith McCluskey	Trainee Clinical Psychologist	University of Glasgow	Principal Investigator
Dr Garry Tanner	Clinical Director	Wishaw General Hospital	Named Contact
Emma-Jane Gault	Research Governance Officer	University of Glasgow	Sponsor Contact

Major Research Project Proposal

Validation of the Flexibility of Responses to Self-Critical Thoughts Scale (FoReST) within a clinical population.

Trainee Clinical Psychologist

0306066

Research supervisors:

Academic: **Dr Ross White**

Clinical: **Dr Peter Larkin**

25th January 2016

Version: 7.1

Word Count:3874

1. Abstract

Background

Psychological flexibility (PF) is defined as the ability to be in the present moment with full awareness and openness to our experience and to take action guided by our personally held values (Harris, 2009). Acceptance and Commitment Therapy (ACT) seeks to increase an individual's ability to respond to their experiences with acceptance and creativity by cultivating PF. Compassion Focused therapy (CFT) seeks to develop a self-compassionate stance in order to help people be more open to experiencing their difficult thoughts and feelings. It is particularly useful for people who experience high levels of shame, self-criticism and an increase in self-attacking cognitions. In an attempt to incorporate ACT and CFT, a new measure was designed to assess changes in a client's psychological flexibility in response to their self-critical thoughts (Larkin & White, 2014).

Aims

This project aims to contribute to the development and validation of the Flexibility of Responses to Self-critical Thoughts Scale- FoReST-12 (Larkin & White, 2014), by assessing if this measure is valid within a clinical population and in particular confirming the factor structure of this measure.

Methods

Individuals attending Primary Care and Community Mental Health Teams within NHS Greater Glasgow and Clyde (NHSGGC) and Psychological Therapy Teams within NHS Lanarkshire will be invited to take part in this study, with the hope to recruit 120 participants. They will be asked to complete seven questionnaires, including the FoReST, either in paper form or electronically via an online link. Exploratory Factor Analysis will be used on this clinical sample to test the factor structure found in Larkin & White's (2014).

Applications

This research will add to the continued evaluation of a new measure, which is unique in exploring the relationship that people have with self-critical thoughts. It will be the first time this measure will be administered to a clinical population with

reported psychological difficulties. This new measure will be of use for practitioners using ACT, CFT and those integrating both.

2. Introduction

Psychological flexibility (PF) is defined as the ability to be in the present moment with full awareness and openness to our experience and to take action guided by our values (Harris, 2009). Psychological inflexibility is in direct opposition to this and is displayed when one fails to engage in values-based actions and seeks to control and suppress their difficult internal experiences, such as thoughts, feelings and bodily sensations. Evidence suggests that an unwillingness to stay in contact with internal experiences can reinforce a non-accepting and judgmental stance towards emotional experience (Baer, Smith & Allen, 2004). Therefore, interventions that focus on teaching individuals to avoid or control their emotions may unintentionally be associated with the paradoxical effects described above (Gratz et al. 2010). Psychological inflexibility and experiential avoidance are theorized to contribute to the development, maintenance and exacerbation of a broad range of psychological problems. Bond and Bunce (2003) also found that psychological inflexibility can predict mental health difficulties over time.

2.1 Acceptance and Commitment Therapy

Acceptance and Commitment Therapy (ACT) seeks to increase an individual's ability to respond to their experiences with acceptance and creativity by cultivating psychological flexibility. The ACT model outlines six overlapping processes, which can lead to psychological flexibility:

8. **Acceptance:** The process of acceptance describes a willingness to contact and embrace difficult inner experiences, which provides an alternative to experiential avoidance. Acceptance is fostered as a method of increasing values-based action, through an active curiosity and deliberate exploration of thoughts and feelings (Hayes, Pistorello & Levin, 2012).

9. **Cognitive Defusion**: The process of defusion aims to develop skills in experiencing and observing thoughts, feelings and bodily sensations allowing the person to become aware of their experiences and change the way they interact or relate to them.
10. **Being Present**: Refers to the on-going, non-judgemental contact with psychological and environmental events as they occur. It involves using mindfulness and awareness training exercises to consciously pay attention to here and now experiences.
11. **Self-as-context**: The process of self as context is explored through practice in experiencing oneself as the context in which thoughts and emotions occur rather than becoming overly preoccupied with the nature of these experiences.
12. **Values:** ACT places specific emphasis on individuals exploring valued life domains. It is thought that clarifying values can give direction and create a meaningful life.
13. **Committed action**: this means taking effective action, which is guided by your values. Psychological and behavioural flexibility is promoted when individuals engage in committed action that is consistent with them moving towards valued directions.

The ACT model posits that human suffering is often rooted in *experiential avoidance*, the tendency of individuals to seek to avoid or alter difficult private events, even when doing so leads them to act in a manner inconsistent with their values or goals (Hayes et al 1996). Therefore, within ACT the focus is not just on the reduction of discomfort but in allowing oneself to behave in a valued way, in the presence of this discomfort (Ruiz, 2010). ACT is referred to as a “third wave” therapy in that it builds on the cognitive-behavioural therapy tradition, which in turn was formed on the foundations created by behavioural therapy. Rather than focusing on changing psychological events directly through first-order change strategies, these interventions seek to explore the functional context in which these

symptoms are experienced and employ second-order change strategies such as mindfulness, acceptance, or cognitive defusion (Teasdale, 2003).

2.2 Compassion Focused Therapy

Another “third wave” therapy with an increasing evidence base is Compassion Focused therapy (CFT) developed by Paul Gilbert (Gilbert, 2009a). It is particularly useful for people who experience high levels of shame, self-criticism and an increase in self-attacking cognitions. CFT encourages people to experience their difficult thoughts and feelings by helping them develop a more self-compassionate stance. According to Gilbert’s (2009a) model, the ability to self-soothe develops in a context of secure attachment with early caregivers. In a developmental context characterised by abuse and neglect, the affect regulation system responsible for self-soothing and safeness does not develop properly because the individual invests most of their time and resources identifying and responding to threats. In this context, “a self-critical style is often internalised as a protective strategy to prevent further abuse and to develop a better (less inferior) social rank" (Gilbert & Irons, 2005). Therefore, through examining self-critical processes a therapeutic approach was developed that is designed to reduce shame and self-criticism by helping patients develop self-compassion.

Neff (2003b) states that the concept of self- compassion can be seen as a healthy alternative to both self-criticism and high self-esteem and consists of three main components:

(a) *Self-kindness*—being kind and understanding toward oneself in instances of pain or failure rather than being harshly self-critical,

(b) *Common humanity*—perceiving one's experiences as part of the larger human experience rather than seeing them as separating and isolating, and

(c) *Mindfulness*—holding painful thoughts and feelings in balanced awareness rather than over-identifying with them.

Steven Hayes (2012), the co-founder of ACT, has described ACT and CFT as ‘fellow-travellers’. Both these therapies have a focus on mindfulness; this refers

to a process that leads to a mental state characterized by non-judgmental awareness of the present moment experience, including one's sensations, thoughts, bodily states, consciousness, and the environment, while encouraging openness, curiosity, and acceptance (Kabat-Zinn, 1994). Research has shown that developing mindfulness practice, can lead to an increase in positive aspects of mental health and a reduction of psychological symptoms of distress (Nyklicek & Kuijpers, 2008). Mindfulness, from an ACT perspective consists of the first four processes outlined above; Acceptance, Cognitive Defusion, Being present and Self-as-context (Wilson and Defrue, 2011).

2.3 The Flexibility of Responses to Self-critical Thoughts Scale (FoReST)

To investigate the potential value of integrating ACT approaches with CFT techniques, it was proposed to develop a new assessment measure, which would explore the therapeutic processes that such an intervention would aim to affect. ACT seeks to measure therapeutic change by developing an acceptance of self-attacking cognitions, whilst simultaneously promoting willingness to engage in a valued activity. There are some existing assessment measures, which aim to give an individuals' measure of self-compassion and/or self-criticism (Self-Compassion Scale: SCS, Neff et al, 2003a; Forms of Self-Criticizing/Attacking & Self-Reassuring Scale: FSCRS, Gilbert et al, 2004). However, rather than seeking to reduce the intensity or frequency of self-attacking cognitions, an ACT perspective is interested in the extent to which the person fuses with these cognitions and treats them as a block or impediment to engaging in value-consistent behaviour (Acceptance and Action Questionnaire: AAQ-II, Bond et al, 2011).

In an attempt to assimilate the two, a new measure has been designed to assess changes in a client's psychological flexibility in response to their self-critical thoughts (Larkin & White, 2014). This measure has been named the FoReST: Flexibility of Responses to Self-critical Thoughts Scale. It seeks to explore people's willingness to experience self-attacking thoughts whilst simultaneously committing to values-directed action in the presence of such thoughts. Exploratory Factor Analysis (EFA) was used to investigate the factor structure of the FoReST

in a convenience sample of 253 adults. Construct validity was explored by comparing the FoReST with measures of similar constructs, such as: Psychological flexibility, Self-compassion and Self-criticism. It was also compared against potentially related outcomes, including anxiety, depression and quality of life. Factors were extracted using a maximum-likelihood EFA. An acceptable 2-factor model (FoReST-12 items) was identified which explained approximately 60% of available variance and demonstrated good internal consistency as well as good concurrent and predictive validity (Larkin & White, 2014).

3. Aims and Hypotheses

This project aims to continue the development and validation of the FoReST (Larkin & White, 2014). The FoReST is thought to be the first measure to assess the core therapeutic process of change in ACT with highly self-critical individuals.

3.1 Aims

- To assess if this measure is valid within a clinical population, with a range of mental health disorders.
- To assess the **Internal consistency** of the FoReST, by examining how well each item on the FoReST measures the same construct.
- To assess the **Construct Validity** of the FoReST by measuring the:

    - *Incremental validity:* the extent to which the FoReST explains or predicts PF, relative to other existing measures.

    - *Concurrent validity*: the extent to which the FoReST will correlate with other measures of the same construct that are measured at the same time. For example, how it correlates with other measures of PF and self attacking cognitions.

- *Predictive validity*: the extent to which a score on the FoReST predicts scores on validated measures of Depression, Anxiety and Quality of life.

3.2 Hypothesis

- The factor structure obtained for the FoReST by EFA within a clinical sample, will mirror that obtained by Larkin and White (2014) using a non-clinical sample.

4. Method

4.1 Participants

A clinical sample of patients who attend Primary Care (PCMHT) and Community (CMHT) Mental Health Teams in the NHSGGC and Psychological Therapy Teams in NHS Lanarkshire Health Boards will be invited to take part in this study.

4.2 Eligibility Criteria

To be eligible for this study, participants must be attending a PCMHT, CMHT or Psychological Therapy Team within NHS GGC or NHS Lanarkshire. As recruitment is within adult services, the age range is 17 years and above and there is no upper age limit. Due to the standardisation of the measures used, participants will need to be proficient in the English language.

The following **Exclusion criteria** will apply:

- Participants with a Learning disability or Cognitive Impairment.
- Participants who are unable to understand written English (need reading age of 8 years and above).
- Participants with a Severe and Enduring Mental illness, for example, psychosis.

4.3 Recruitment Procedures

Firstly, Heads of Service at identified services will be approached with a proposal detailing the aims and protocol of the study with a view to recruiting from their

teams. Researchers will also make links with fellow clinicians who work within Mental Health Teams in NHSGGC and NHS Lanarkshire, who have a particular interest in ACT and CFT. There is currently an ACT Special Interest Group run by Dr Ross White in Mental Health and Wellbeing Department at the University of Glasgow, which may provide access to suitable clinicians who would be willing to act as "champions" for the research and advertise the study within their teams.
The lead researcher will visit all participating sites and speak to clinicians within a team meeting or seminar slot, to provide information about the study and fully brief them on the recruitment protocol. They are advised to only invite and provide a research pack to those patients who meet the eligibility criteria (see above). They will be made aware of their role in assessing a participant's capacity to consent and their involvement in completing a consent form with the participant before they can take part.

The study may be advertised by posters and fliers in the waiting room of clinics but participants will be directed to contact their clinician if they would like more information. Clinicians may also invite participants who meet the inclusion criteria and provide them with a research pack. This pack includes a Consent form, Patient information sheet, Questionnaire booklet and a Debrief sheet.
The main researcher's email address and telephone number will be provided, should the individual wish to contact them for information before taking part in the study and they can also discuss it with their clinician. The Participant Information sheet will clearly outline the aim of the study and what is required of participants. It will explain that a participant needs to complete a consent form to confirm that they wish to take part. To confirm understanding of their participation in the study, participants will be asked to read statements and provide initials and a signature with a mental health clinician, on a separate consent form before starting the questionnaires. The questionnaire booklet will contain a front page of demographic information page and then 7 short questionnaires. Participants can complete the paper copy of the questionnaire booklet or they can follow the link on the information sheet to complete the study online. Participants will be advised

that the completion of the booklet may take up to 15 minutes and if they are not able to complete and return on site, they can complete the booklet at home and return using the free postal addressed envelope enclosed in the pack. Those wishing to complete on site will be asked to place the questionnaires into the provided envelope and return to reception. Participation in the study will not affect any future treatment or care.

As an incentive for participants to take part in this study, they can choose to have their details entered into a prize draw.

4.4 Measures

Demographics

The questionnaire pack will include some socio-demographic information on the front page, regarding the participants' Date of birth, sex, postcode etc. Additional information regarding diagnosis (self-rated) will also be requested.

In order to explore the convergent and predictive validity of the FoReST-12, the participants will also need to complete 6 existing measures of theoretically related constructs and theoretically expected outcomes. Including:

1. **Acceptance and Action Questionnaire- AAQ-II** (Bond et al, 2011). A measure of capacity to accept experiences, difficult or otherwise, and take value-directed action regardless of them (e.g. "I'm afraid of my feelings"). It has demonstrated good internal consistency (r=0.84), test-retest reliability (r=0.79), and construct validity (Bond et al, 2011). 7-items.

2. **Forms of Self-Criticizing/Attacking & Self-Reassuring Scale- FSCRS** (Gilbert et al, 2004). An assessment of participants' level and forms of Self-criticising and self-reassuring thoughts (e.g. "when things go wrong for me I am easily disappointed with myself"). Inadequate-Self and Self-Hating subscales were found to have internal consistency of 0.90 and 0.86 respectively in a sample of female students (Gilbert et al, 2004). 22-items.

3. **Self-Compassion Scale- SCS-SF** (Neff et al, 2003). A measure exploring self-

compassion and self-coldness in individuals (e.g. “I’m kind to myself when I’m experiencing suffering”). It has been shown to have excellent internal consistency in a student sample (α=0.92 ; Neff et al, 2003). 12-items.

4. **Hospital Anxiety and Depression Scale- HADS** (Snaith and Zigmond, 1994) A measure of current levels of anxiety and depression symptomatology. HADS-A has demonstrated Cronbach's α between 0.68 and 0.93 (mean 0.83) and for HADS-D scored between 0.67 and 0.90 (mean 0.82) (Bjelland et al, 2001). 14-items.

5. **Work and Social Adjustment Scale- WSAS** (Mundt et al, 2002) A measure of relative impairment in work and social domains due to mental illness or stress (e.g. “Because of my problems my ability to work is impaired”). Two studies with people with depressive illness and OCD respectively recovered Cronbach’s α scores between 0.79 and 0.94 and an overall test-retest correlation of 0.73. (Mundt et al, 2002). 5-items.

6. **Mental Health Continuum-Short Form- MHC-SF** (Keyes et al., 2008) A measure with 14 items that aims to assess three components of well-being: emotional (3 items), social (5 items) and psychological (6 items). MHC has shown excellent internal consistency (> .80) and discriminant validity in adults in the U.S., in the Netherlands, and in South Africa (Keyes et al., 2008; Lamers et al., 2011). 14-items.

4.5 Design

A cross-sectional correlation design study will be used to evaluate the questions of interest.

4.6 Research Procedure

Participants will be recruited from PCMT’s and CMHT’s within NHSGCC and Psychological Therapy Teams in Lanarkshire (see recruitment section). Eligible participants will be invited to take part in the study by their clinician and provided with a research pack. This pack includes a Consent form, Patient information sheet, Questionnaire booklet and a Debrief sheet. Alternatively, participants can

complete an online version of the questionnaire booklet, following the link found on the Patient information sheet. The main researchers contact details will be made available to allow participants to ask any questions about the study.

4.7 Data Analysis

Internal consistency will be measured by completing a Cronbach's alpha. Similar to Forman et al, 2012, a Confirmatory factor analysis will not be used because we can not assume that the clinical population will necessarily respond in the same way as the non-clinical population in Larkin's (2014) study. EFA should detect underlying constructs that explain sufficient variance in the measured variables (Floyd & Widaman, 1995). Construct validity is supported if the factor structure of the FoReST is consistent with the constructs that it intends to measure. This will be assessed by completing correlations of the FoReST against the other assessment measures. Incremental validity will also be examined using the methods outlined by Hayes and Lench (2003). The first step will be to examine a zero-order correlation matrix that includes all predictor and criterion variables. This matrix will show the independent strength of relationship between each predictor and each criterion variable. Following this, hierarchical regression analyses will be completed to assess if the addition of the FoReST will increase predictive validity of one or more criteria, such as psychological flexibility.

4.8 Justification of sample size

Although sample size is important in factor analysis, there are varying opinions and some disagreement regarding what guidelines to follow when predicting adequate sample size. Of the varying recommendations, few recommend a minimum sample size below 100. Gorsuch (1983) referred to the 'Rule of 100', recommending a sample size of at least 100, even if the number of variables is less than 20. Hatcher (1994) recommended that the number of subjects should be no smaller than 5 times the number of variables, or a minimum of 100. Bond et al (2011) recruited 206 participants for their exploratory factor analysis of the AAQ-II (which included 49 items) and so in line with this, Larkin & White (2014)

were able to recruit 253 participants to complete exploratory factor analysis on the FoReST (originally 46 items). Gillanders et al. (2014) recruited a sample of 215 individuals from NHS Mental health services in their study to validate the Cognitive Fusion Questionnaire- CFQ. Taking into account that this is a doctoral project with a limited time frame for recruitment, the least stringent recommendation of sample size will be adopted. Guidelines from Friendly (2008) state that the number of subjects (N) > 10p, where p is the number of items. The FoReST has 12 items, so the researcher will aim to recruit (12x10), 120 participants. It is hoped that this will be achieved by securing at least 10 recruitment sites.

4.9 Setting and Equipment

Completion of the questionnaire booklets will either be within a PCMHT/CMHT NHS setting or completed at the discretion of the participant outwith the clinic. To increase access to the study, participants may also access the questionnaire booklet online. There will be no requirement for any home visits. All the measures used in this study can be reproduced free of charge.

5. Health & Safety Issues

Local and NHS health and safety procedures will be followed. There will be no greater risk to participants or researchers than during usual clinical practice.

6. Ethical Issues

Ethical Approval for all experimental and data management procedures will be sought from the appropriate NHS Research Ethics Committee. Information collected will be anonymised by the removal of identifying details and stored on a NHSGGC computer, in accordance with NHSGGC data protection policy and procedure. The hard copies of patient's booklets will be stored in a locked cabinet in the Department of Mental Health and Wellbeing.

The questionnaires promote self-reflection and examination of an individuals coping style. If distress is raised during participation, they will be encouraged to access appropriate support from their mental health worker within the team. The

information booklet will also provide contact details for support agencies such as The Samaritans and Breathing Space. Individuals will be reminded that their participation is voluntary and they can opt out of the study at anytime.

7. Financial Issues

All assessment measures have permission to be copied so the costs will only include the photocopying of questionnaires and any other posters/ information sheets. There will also be a small surcharge to use the University freepost address on envelopes.

8. Timetable

Following proposal submission in November 2015, ethical approval will be sought by December 2015, in order to start recruitment in January/February 2016. It is hoped recruitment will be completed by end of May 2016, in order for analysis and write up to be done by June 2016. Following amendments, final submission will be in July 2016.

9. Practical Applications

This research will add to the continued evaluation of a measure which is unique in exploring the relationship that people have with self-critical thoughts. It will be the first time this measure will be administered to a clinical population with reported psychological difficulties. Self-critical thoughts can occur in various types of mental health problems e.g. depression, psychosis and so the measure will have transdiagnostic application. This new measure will be of use for practitioners using ACT, CFT and those integrating both. This may also add to the work done by Levin et al (2014) on examining Psychological Inflexibility as a transdiagnostic process.

This report will be submitted by the Lead Researcher as part of her thesis for a Doctorate in Clinical Psychology from the University of Glasgow. If published, the results will be obtainable in an academic journal and may also be presented at

scientific meetings or conferences. The report will not include any personal details of the people who took part.

References

Baer, R. A., Smith, G. T. & Allen, K. B. (2004). Assessment of mindfulness by self-report: the Kentucky inventory of mindfulness skills. *Assessment 11*, 3, 191-206.

Bond, F. W. & Bunce, D. (2003). The role of acceptance and job control in mental health, job satisfaction and work performance. *Journal of Applied Psychology*, 88, 1057-1067.

Bond, F. W., Hayes, S. C., Baer, R. A., Carpenter, K. M., Guenole, N., Orcutt, H. K., & Zettle, R. D. (2011). Preliminary psychometric properties of the Acceptance and Action Questionnaire–II: A revised measure of psychological inflexibility and experiential avoidance. *Behavior Therapy*, *42*(4), 676-688.

Floyd, F.J. & Widaman, K.E. (1995). Factor Analysis in the Development and Refinement of Clinical Assessment Instruments. *Psychological Assessment, 7(3),* 286-299.

Forman, E.M., Herbert, J.D., Juarascio, A.S., Yeomans, P.Y., Zebell, J.A., Goetter, E.M. & Moitra, E. (2012). The Drexel defusion scale: A new measure of experiential distancing. *Journal of Contextual Behavioral Science,1,* 55-65.

Friendly, M. (2008). Exploratory and Confirmatory Factor Analysis. [Powerpoint slides]. Retrieved from http://www.datavis.ca/courses/factor/efacfa-handout3-2x2.pdf.

Gilbert, P. (2009a). Introducing compassion-focussed therapy. *Advances in Psychiatric Treatment, 15*, 199 – 208.

Gilbert, P. (2009b). *The Compassionate Mind*. London: Constable Robinson and USA: New Harbinger.

Gilbert, P., Clarke M, Hempel S, Miles J.N.V.& Irons C. (2004).Criticizing and reassuring oneself: An exploration of forms style and reasons in female students. *British Journal of Clinical Psychology 43,* 31-50.

Gilbert, P. & Irons, C. (2005). Focused therapies and compassionate mind training for shame and self-attacking. In P. Gilbert (Ed.), *Compassion: Conceptualisations, research and use in psychotherapy* (pp. 263-325). London: Routledge.

Gorsuch, R. L. (1983). *Factor analysis* (2nd ed.). Hillsdale,NJ: Erlbaum.

Gratz, K. L., & Bornovalova, M. A., Delany-Bumsey, A., Nick, B., &Lejuez, C. W. (2007). A laboratory based study of the relationship between childhood abuse and experiential avoidance among inner city substance users: The role of emotional nonacceptance. *Behaviour therapy, 38,* 256-268.

Hatcher, L. (1994). *A Step-by-Step Approach to Using the SAS® System for Factor Analysis and Structural Equation Modeling*. Cary, NC: SAS Institute, Inc.

Hayes, S. C., Luoma, J., Bond, F., Masuda, A., and Lillis, J. (2006). Acceptance and Commitment Therapy: Model, processes, and outcomes. *Behaviour Research and Therapy, 44,* 1-25.

Hayes, S. C., Pistorello, J., & Levin, M. E. (2012) Acceptance and Commitment Therapy as a Unifed Model of Behavior Change. *The Counselling Psychologist, 40 (7),* 976-1002.

Haynes, S. N., & Lench, H. C. (2003). Incremental validity of new clinical assessment measures. *Psychological assessment*, *15*(4), 456–66.

Kabat-Zinn, J. (1994). Wherever you go there you are. New York, NY: Hyperion.

Keyes, C. L. M., Wissing, M., Potgieter, J. P., Temane, M., Kruger, A., & van Rooy, S. (2008). Evaluation of the Mental Health Continuum Short Form (MHC-SF) in Setswana speaking South Africans*. Clinical Psychology and Psychotherapy, 15,* 181–192.

Lamers, S.M.A., Westerhof, G.J., Bohlmeijer, E.T., ten Klooster, P.M., & Keyes, C.L.M. (2010). Evaluating the psychometric properties of the Mental Health Continuum-Short Form (MHC-SF). *Journal of Clinical Psychology, 67,* 99-110.

Larkin, P. & White, R. (2014). Development and validation of an assessment of psychological flexibility in response to self-attacking thoughts. (in press)

Levin, M. E., MacLane, C., Daflos, S., Seeley, J. R., Hayes, S. C., Biglan, A. & Pistorello, J. (2014). Examining Psychological Inflexibility as a Transdiagnostic process across psychological disorders. *Journal of Contextual Behavioral Science, 3,* 155–163.

Mundt, J. C., I. M. Marks, et al. (2002). "The Work and Social Adjustment Scale: a simple measure of impairment in functioning." *British Journal of Psychiatry,180*, 461-464.

Neff, K. D. (2003a). The development and validation of a scale to measure self-compassion. *Self and Identity*, *2*(3), 223-250.

Neff, K. D. (2003b). Self-compassion: An alternative conceptualization of a healthy attitude toward oneself. *Self and Identity, 2,* 85–101.

Nyklicek, I. & Kuijpers, K. F. (2008). Effects of mindfulness-based stress reduction intervention on psychological well-being and quality of life: is increased mindfulness indeed the mechanism? *Annals of Behavioural Medicine*, 35, 331-340.

Ruiz. F. J. (2010). A review of acceptance and commitment therapy empirical evidence: Correlational, experimental psychopathology, component and outcome studies. *International Journal of Psychology and Psychological Therapy, 10(1)*, 125-162.

Snaith, R. P., & Zigmond, A. S. (1994). HADS: Hospital Anxiety and Depression Scale. 1994. *Windsor: NFER Nelson*.

Yadavaia, J. E., Hayes, S. C. & Vilardaga, R. (2014). Using acceptance and commitment therapy to increase self-compassion: A randomized controlled trial. *Journal of Contextual Behavioral Science, 3,* 248–257.

APPENDIX 2:11 SPSS Output for EFA

KMO and Bartlett's Test

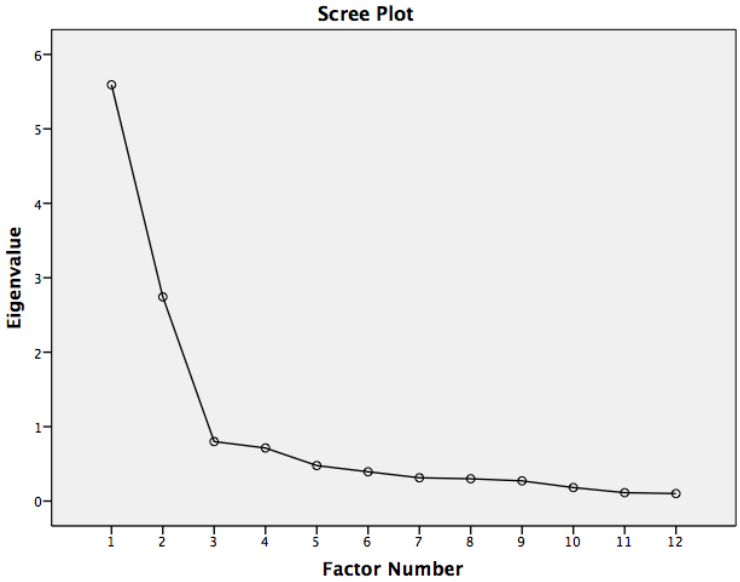
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.855
Bartlett's Test of Sphericity	Approx. Chi-Square	1179.359
	df	66
	Sig.	.000

Total Variance Explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings[a]
Factor	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	5.592	46.602	46.602	3.892	32.437	32.437	3.329
2	2.743	22.856	69.459	3.752	31.267	63.703	4.900
3	.800	6.664	76.123				
4	.713	5.945	82.068				
5	.477	3.977	86.045				
6	.394	3.283	89.328				
7	.313	2.609	91.938				
8	.300	2.498	94.435				
9	.272	2.265	96.700				
10	.182	1.516	98.216				
11	.113	.942	99.158				
12	.101	.842	100.000				

Extraction Method: Maximum Likelihood.

a. When factors are correlated, sums of squared loadings cannot be added to obtain a total variance.



Pattern Matrix[a]

	Factor	
	1	2
1. It makes me lose control of my behaviour	.152	.636
2. I do things I later regret	.038	.696
3. I feel so disgusted at myself that I don't act the way I should	-.056	.933
4. I feel so ashamed that I don't act in the way I should	-.012	.896
5. I don't treat others the way I would like	-.167	.686
6. I act in a way that makes life more difficult for me	-.005	.775
7. I don't treat myself the way I would like	.134	.620
8. It gets me so down that I don't act the way I should	.026	.789
9. I try to ignore it	.899	.007
10. I try not to think about it	.994	-.085
11. I try to block out any feelings it creates	.754	.083
12. I pretend it's not there	.723	.026

Extraction Method: Maximum Likelihood. Rotation Method: Oblimin with Kaiser Normalization.

a. Rotation converged in 4 iterations.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.890	.891	12

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
49.82	213.875	14.624	12

Factor Correlation Matrix

Factor	1	2
1	1.000	.270
2	.270	1.000

Extraction Method: Maximum Likelihood.
Rotation Method: Oblimin with Kaiser Normalization.