

**The Relational Compassion Scale: Development and Validation of a new self
rated Scale for the Assessment of Self-Other Compassion**

AND CLINICAL RESEARCH PORTFOLIO

PART I

(PART II BOUND SEPARATELY)

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**Systematic review of the published evidence base for the
Mindfulness-Based Stress Reduction programme (MBSR)**

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Abstract

Objective: To review the evidence base of the Mindfulness-Based Stress Reduction (MBSR) programme on aspects of health and to investigate sources of systematic variation in study methodology. **Method:** A systematic review of the literature published in English language was conducted using PsycINFO, MedLine and the Cochrane Library. In addition, retrieved papers and reports known to the authors were also reviewed for additional relevant literature. A standardised quality assessment grid (Clinical Trial Assessment Measure) was used to evaluate the quality of reporting. **Results:** In total, 49 papers were identified of which 16 met inclusion criteria. Results from randomised controlled trials suggest that MBSR has a significant positive effect on aspects of psychological, physical and spiritual health immediately post treatment. Positive improvements were reported for symptoms including stress, anxiety, depression, immunological parameters, brain functioning and spirituality. A minority of studies sufficiently described the process of randomisation. Only one study employed a standardised mindfulness outcome measure. The majority of studies were underpowered and did not employ an active control condition. **Conclusions:** Overall, the findings suggest that MBSR is probably related to significant positive changes on different aspects of health. Future studies may address current limitations by incorporating standardised mindfulness outcome measures and an adequate control condition, by routinely reporting effect sizes on outcome measures and by discussing the clinical significance of findings in a concerted effort to investigate the efficacy and effectiveness of MBSR. At present, the available evidence from randomised controlled trials does not warrant firm conclusions to be drawn regarding the efficacy of MBSR.

Keywords: mindfulness-based stress reduction, systematic review, clinical trial
assessment measure

Introduction

Over the last 20 years, mindfulness-based treatment approaches have become the focus of considerable attention [1] evidenced in recent developments of numerous mindfulness-based treatment interventions [2-5].

Perhaps one of the most frequently quoted definitions by Kabat-Zinn [6, p. 4] describes mindfulness as: *'paying attention in a particular way: on purpose, in the present moment, and non-judgmental'*. In an attempt to demarcate a common ground for a theory of mindfulness, Shapiro and colleagues [7] postulated a three-component model of the primary mechanisms in mindfulness practice:

- 'Paying attention' or *attention*,
- 'On purpose' or *intention*,
- 'In a particular way' or *attitude*.

[7, p. 375]

This review will focus on the Mindfulness-Based Stress Reduction programme (MBSR) [2] as it has, as an early example of a standardised mindfulness-based intervention, attracted a substantial body of primary research evidence. Moreover, MBSR links well into the emerging area of interdisciplinary health research, highlighting the interrelatedness of different aspects of health [8, 9]. This relationship between MBSR and different aspects of health is succinctly expressed in the following quote by Kabat-Zinn: *'...it is incumbent on researchers to define how they are conceptualizing health because (1) it can be characterized in many different ways depending on the populations in question, (2) it is a dynamic, nonlinear process rather than a fixed state, and (3) it has a spiritual as well as physical and psychological*

dimensions' [10, p. 731]. Consequently research has adopted a comprehensive approach in its pursuit to establish the efficacy of MBSR, employing psychological, physical and spiritual¹ outcome measures.

According to its author, MBSR was originally designed to '*catch people with a broad range of medical problems and diagnoses who were falling through the cracks of the health care system'* [10, p. 732]. The intervention involves clients attending classes for up to 2.5 hours once per week for 8 weeks in groups of 20 to 35 clients per class. During sessions, clients engage in various meditation practices and are assigned daily homework. The programme also incorporates an all-day silent retreat in the sixth week of the programme.

Investigating the effectiveness of MBSR has resulted in a significant body of research publications including numerous recent systematic reviews [1, 11-18].

Praissman evaluated the evidence on the '*...usefulness [of MBSR] for reducing stress in a variety of populations'* [18, p. 212]. The review, which included both controlled and non-controlled studies, concluded that MBSR is an effective treatment for reducing stress and anxiety accompanying daily life and chronic illness.

Ivanoski and Mahli [19] reviewed the psychological and neuropsychological literature pertaining to mindfulness meditation in general. The review identified 14 studies. Integrating findings for different mindfulness-based interventions, the review concluded that it is unclear whether MBSR has any effect over and above placebo in populations with psychiatric disorders.

¹ In this review spirituality was defined as a set of '*personal views and behaviours that express a sense of relatedness to the transcendental dimension or to something greater than the self'* [20, p. 187]. Spirituality has been related to physical and psychological well-being [21, 22] and predicts various health outcomes [20, 23].

Toneatto and Nguyen [16] reviewed the literature on the effectiveness of MBSR in alleviating symptoms of depression and anxiety. The authors identified 15 studies of which ten were randomised controlled trials. They concluded that the *'evidence for a beneficial effect of MBSR on depression and anxiety was equivocal. When active control groups were used, MBSR did not show an effect on depression and anxiety'* [16, p. 260]. Moreover, methodological issues including sample size, control group, follow-up, randomisation and assessment method precluded strong conclusions.

Shigaki and colleagues [15] reviewed controlled and non-controlled studies on the effectiveness of MBSR in medical settings. The authors concluded that findings provided preliminary support for the effectiveness of MBSR in specific medical populations, including persons with chronic pain, cancer and heart diseases. The authors further highlighted the need for increased research rigor and methodological refinement to support firmer conclusions.

Smith and colleagues [14] reviewed the evidence for the effectiveness of MBSR as a supportive therapy in cancer care. The authors identified three randomised controlled trials and seven uncontrolled trials. The authors concluded that MBSR has potential as a clinically valuable self-administered intervention for cancer patients. They recommended, however, that further research into its efficacy, feasibility, and safety for cancer patients in the nursing context is needed. Once again the authors identified numerous methodological limitations including small sample size, limited description of the randomisation process, lack of reporting of recruitment and sampling method and insufficient analysis of dropouts. The lack of controlled studies precluded any firm conclusions on the efficacy of MBSR.

Grossman [13] reviewed the evidence of MBSR on health benefits. Based on 20 controlled and non-controlled studies, the authors concluded that MBSR may help a broad range of clients to cope with their clinical and non-clinical problems. The review further reported an average medium effect size of 0.5 across studies and greater effect sizes for MBSR on mental health compared to physical health. The authors enumerated several methodological limitations including insufficient reporting of dropouts, concurrent interventions, therapist expertise and treatment fidelity, power calculation and clinical significance of findings.

Salmon and colleagues [12] reviewed outcome studies of the MBSR intervention in medical settings. The authors reported results from seven randomised controlled trials and 13 non-controlled trials. The authors concluded that MBSR has been shown to have significant effect on pain, anxiety, depression and other medical symptoms. The authors make several suggestions for future research to address including multi-modal assessments of outcome domains (e.g. physical and behavioural, adjustment and effective coping), the role of mediating factors, the use of appropriate control conditions (e.g. other stress reduction intervention) and a decomposition of active treatment elements.

Bear [11] providing a conceptual and empirical review of mindfulness interventions in general, concluded that although the current literature included many methodological flaws, findings suggested that mindfulness-based interventions may be helpful in the treatment of several disorders. The author critically remarked that studies often did not employ an active control condition, recruited too small samples and failed to address issues concerning treatment fidelity and clinical significance of MBSR.

Bishop [1] reviewed the available literature in the medical and social literature. Bishop's review goes beyond merely reviewing the effectiveness of MBSR by exploring the construct of mindfulness and potential mechanism of action. Based on four controlled and seven non-controlled studies, the author concluded that MBSR seems to hold promise as a potentially effective treatment option, however, controlled studies are clearly needed.

Overall, the findings illustrated a growing interest from researchers and clinicians in mindfulness-based interventions. The research on the effect on MBSR has attempted to accrue evidence for a wide range of health conditions and client populations. However, such variability has given rise to considerable controversy on the effect of MBSR as the previous section illustrated. Overall, the emerging heterogeneous picture on the evidence base for MBSR can perhaps be succinctly summarised by the following quote by Kabat-Zinn:

'At this point, I believe it is fair to say that the jury is still out on the degree to which mindfulness can influence physical, psychological, or spiritual health, but, as outlined [...] many lines of evidence suggest that it does, and often in profound and surprising ways in both the short and the long term' [10, p. 731].

Compared to previous reviews, this review aimed to assess the impact of MBSR on aspects of health by employing several distinct features. The review systematically investigated source of methodological variability. Moreover, only randomised controlled trials were included in this review to reduce the heterogeneity in terms of study design. Lastly, outcomes were assessed using the three outcome domains suggested by Kabat-Zinn [10] (i.e. psychological, physical and spiritual health). This literature review addressed the following research questions:

1. For what conditions is MBSR effective?
2. What are systematic sources of variability within the MBSR literature?

Methods

Trial Inclusion

To identify the potentially relevant literature a database search was performed. A search for papers in English was undertaken using PsycINFO (from 1967 until April 2008), MedLine (from 1950 until April 2008) and Cochrane Library with the following search terms either as key words or key terms:

(MINDFULNESS or MINDFULNESS BASED STRESS REDUCTION or MBSR) and (RCT or RANDOMIZED CONTROLLED TRIAL or RANDOMISED CONTROLLED TRIAL or CLINICAL CONTROL).

In addition, references of the retrieved papers were checked for previous not identified studies.

Forty-nine publications were identified and hand-searched including their respective reference lists.

The criteria to retain studies were:

- Studies were published in English.
- Studies were original publications.
- Studies explicitly employed Kabat-Zinn's Mindfulness-Based Stress Reduction intervention [24] or a well-documented variant of the same.
- Studies employed a randomised controlled trial design.

It is of note that studies, which employed other standardised mindfulness-based treatment interventions, including Mindfulness-Based Cognitive Therapy [5], were excluded from this review.

Any ambiguities were resolved in discussions with a collaborating researcher (AG).

Measures

Clinical Trial Assessment Measure

To investigate the variability within the identified literature, the quality of reporting was evaluated. I employed the Clinical Trial Assessment Measure (CTAM) ² [25]. The CTAM is an assessment tool estimating the quality of reporting of clinical trials. Trials are awarded points according to the following criteria:

- Characteristics of the sample (i.e. is the sample a convenience sample or a geographically representative cohort; is the sample size sufficiently large to yield statistical significant results);
- Allocation procedures (i.e. valid randomisation);
- Assessment of outcomes (i.e. have standardised assessment methods been used);
- Control condition (i.e. has a credible control condition been implemented);
- Analysis (i.e. is the employed statistical analysis appropriate for the design and type of outcome);
- Description of treatment (i.e. has the treatment been sufficiently described or a manualised approach been used).

A maximum of 100 points can be awarded. Wykes and colleagues [25] reported adequate internal consistency ($\alpha = 0.697$) and excellent external validity of the CTAM.

² A version of the employed Clinical Trial Assessment Tool (CTAM) has been appended to this report (see Appendix 1.1).

Procedure

Each study was reviewed and assessed for basic descriptive features (e.g. sample size, outcome measures) as well as for the reporting of review specific features including adherence to MBSR practice recommendations, follow-up period, adequate control condition and clinical significant change. Regarding the reporting of findings in this review, all comparisons referred to between-groups comparisons, except otherwise stated. The author of this review (TH) coded the quality of reporting. A collaborating researcher (AG), who is familiar with the CTAM, checked a random sample of studies (N=3) to ensure adherence to the coding criteria. Any emerging discrepancies were resolved in discussions.

Results

General Findings

Figure 1 illustrates the outcome of the search path employed. I included 16 studies in this review, which are summarised in Table 1.

[Insert Figure 1]

[Insert Table 1]

Outcome Domains and Measures

All studies evaluated aspects of psychological health. Physical aspects of health were assessed in six studies [27, 29, 31-33, 41] and two studies [26, 28] investigated the impact of MBSR on spiritual health.

In total, the 16 identified studies utilised 43 different outcome measures. The most frequently employed outcome measures were the SCL90-R, BDI and the STAI. One study [40] explicitly employed a mindfulness outcome measures.

Sample Population

Within the identified study sample the reported sample size varied from 20 to 103 participants. Study participants were most frequently recruited from community or outpatients samples. Three samples were recruited from among university students and three samples recruited health care professionals. Eight studies recruited clients affected by physical conditions including cancer, fibromyalgia, pain and psoriasis [27,

29, 32, 34, 36, 40, 41, 42]. One study [39] specifically recruited participants with a mental health condition (i.e. social anxiety).

Aspects of Health

Psychological Health

Mindfulness-Based Stress Reduction (MBSR) originated from the Stress Reduction and Relaxation Program [2]. As such it highlights the importance of managing stresses in people's life to address the evolution and maintenance of health difficulties. It is therefore perhaps not surprising that half of the studies (N=8) [27-29, 31, 32, 37, 40, 43] directly investigated the impact of MBSR on symptoms of stress³. The results presented a somewhat heterogeneous picture. Five out of eight studies [27-29, 32, 43] reported significant reduced stress symptoms following treatment. Kabat-Zinn [27] argued that, the psychological outcome data as a whole were suggestive of reduced distress. Similarly, results reported by Shapiro [28], Speca [29], Weissbecker [32] and Oman [43] suggested that MBSR significantly reduced stress symptoms. However, three out of the eight studies [31, 37, 40] investigating the impact of MBSR on stress symptoms did not report reliable changes on all stress measures immediately following treatment. A later study by Shapiro [37] reported non-significant changes on psychological distress but significant changes on perceived stress. Williams [31] and Pradhan [40] presented data that were not statistically significant post treatment. It is of note, however, that the latter results reached statistical significance at six months follow-up.

³ The terms distress and stress have been used interchangeably in this review reflecting the interchangeable use of the terms in the current literature.

Investigating the impact of MBSR on anxiety symptoms, I identified seven studies [26-29, 33, 34, 39], which explicitly reported relevant outcomes. All but one study [27] reported significant reduction of anxiety symptoms following treatment. The study by Kabat-Zinn [27] reported no changes on state anxiety symptoms following treatment.

The effect of MBSR practice on depressive symptoms has been investigated in seven studies [26, 28, 29, 32, 39, 40, 41]. Again, all but one study [40] reported significant reductions in depressive symptoms following treatment. Pradhan and colleagues [40] reported non-statistically significant differences when comparing a MBSR group with a waiting list control group. Among studies investigating the impact of MBSR on symptoms of depression, I identified one study [39] comparing MBSR with an adequate control condition. Koszycki [39] compared MBSR with an active CBT group intervention and concluded that both interventions formats were equivalent in reducing self-reported depressive symptoms.

I identified three studies [37, 39, 42] that investigated the relationship between the practice of MBSR and quality of life. All of these three identified studies reported non-statistically significant results.

I identified one study by Pradhan and colleagues [40] investigating the impact of MBSR on mindfulness. The findings of this study suggested that MBSR did not significantly improve mindfulness skills. I decided to report this finding, as mindfulness is an integral component of mindfulness-based treatment interventions.

Other outcome measure included sense of control [26, 34], sense of coherence [32, 38], life and job satisfaction [37, 38], empathy [32], anger [29], self-compassion [37], sense of burnout [37], personal accomplishment [38], forgiveness [43], hope [43] and

rumination [43]. The results for these studies are not reported as I identified insufficient studies to meaningfully interpret these findings.

Physical Health

Six studies [27, 29, 31-33, 41] reported changes of physical aspects of health following the MBSR intervention. Of these six studies significant changes were reported for specific conditions including psoriasis [27], pain [32], brain activity and immune parameters [33], stress [29, 41] and for general medical symptom improvements [31].

Spiritual Health

Both studies [26, 28] investigating the impact of MBSR on spirituality reported a significant increase in spirituality following treatment.

Exploration of Heterogeneity in Sample Cohort

The following paragraphs report on sources of systematic variability in the identified study sample (see Table 2).

[Insert Table 2]

General Findings

Of the 16 identified studies nine studies [27-29, 32, 34, 37-39, 43] employed a pre-post measurement design, whereas the remaining seven studies reported follow-up data [26, 31, 33, 36, 40-42] with follow-up periods between one to six months. Four studies reported delayed treatment gains on outcome measures including psychological distress [26, 31, 40], mental health [36] and well-being [40]. Two studies reported maintained treatment gains for depressive symptoms [41] and physical function and pain acceptance [42]. One study [36] employed both a follow-up design and an active control condition.

Clinical Significance

Less than one third of studies [28, 39, 40, 42, 43] discussed findings in terms of their clinical implications and none of these studies employed a reliable change index criteria [17]. Despite the diversity in outcome measures, few studies discussed the clinical significance of change. These discussed outcome domains included spiritual experience [28], anxiety, mood and quality of life [39], psychological distress [40], pain [42] and stress [43]. It is of note, however, that of the five studies published within the last two years, all but one study [39, 40, 42, 43] discussed the clinical significance to some extent.

Based on the reporting of statistically significant findings of outcome measures, Shapiro and colleagues [28] concluded that the results are consistent with previous findings and as such provided evidence for the effectiveness of MBSR in non-clinical populations. However, the authors further stated that the interpretation of clinical significant change of spirituality is difficult. Koszycki and colleagues [39] concluded that statistically significant improvements and the magnitude of effect sizes suggest clinical meaningful changes. Pradhan and colleagues [40] discussed the clinically significant change on psychological distress in terms of within sample variability. Morone and colleagues [42] discussed results on pain outcome measure in terms of clinically important difference and concluded that the results are suggestive of clinically relevant change. Oman and colleagues [43] concluded that their findings of a medium effect sizes on a perceived stress are clinically worthwhile.

Clinical Trial Assessment Measure (CTAM)

Table 2 illustrated the spread of quality of reporting assessed via studies respective CTAM score. Assigned CTAM scores ranged from 32 to 83. The mean and standard deviation (median and range) for the CTAM were 50.6, 16.3 (50.5, 30-83). For the data available the methodological rigour did not appear to have improved over time ($r_s=0.25$; n.sig.).

Sample Characteristics

All studies recruited convenience samples. Less than a third of studies [28, 29, 33, 40, 41] recruited 27 or more participants per group.

Approximately half of the studies recruited participants from clinical populations [27, 29, 32, 34, 36, 39-42]. However, out of these, only one study recruited participants with a mental health condition [39].

Allocation to Treatment

All studies described the allocation process as randomised. However, fewer than half of the studies described the process by which randomisation was achieved and none of the studies reported a randomisation process that was carried out independently from the trial research team.

Assessment of Outcome

All studies reported outcome results on standardised assessments. Three studies [27, 39, 40] reported assessment processes that were blinded to the treatment allocation condition. However, none of the reported studies verified rater-blinding.

Control Groups

Three studies reported employing adequate control conditions [36, 39, 43]. These studies compared MBSR with standard care in pain-management [36], a group-based CBT for social anxiety [39] and Easwaran's Eight-Point meditation programme [44] for stress symptoms [43].

Comparing MBSR with a pain management programme (i.e. massage programme) [36], the latter was more effective in reducing physical pain while MBSR may have

been more effective in improving mood. Participants in the active control condition group obtained equal good or better outcome results compared to MBSR participants.

Comparing MBSR with cognitive behavioural group therapy (CBGT) [39], CBGT participants reported significantly reduced social anxiety symptoms and produced better remission and response rates.

Lastly, when comparing MBSR with a comparable meditation programme (i.e. Easwaran's Eight-Point meditation programme for stress symptoms) [43], the authors did not find any programme to be superior. However, both interventions resulted in significant changes in reported symptoms of stress and forgiveness.

Analysis

All studies reported analyses appropriate to the design and outcome measure. Few studies reported consultations concerning statistical matters [27, 28, 40, 41, 42]. More than half of the studies [27, 29, 31, 32, 39-43] investigated the handling of dropouts.

Less than half of studies [28, 31, 39-43] employed an intent-to-treat analysis. However, all studies published in 2007 [39-43] or later employed an intent-to-treat analysis.

Treatment Fidelity

The data reported reflected the range of skills, knowledge and expertise of staff delivering the MBSR programme. Approximately half of studies [26, 27, 33, 37, 39-42] reported on the level of expertise on part of the trainers. Moreover, three studies [40,

41, 42] reported the intervention to be delivered by certified MBSR trainers⁴ and three studies [26, 27, 33] reported the intervention being delivered by the author of the MBSR programme. Four studies [26, 36, 38, 40] reported on the use of tapes as means of delivering aspects of the intervention thus reducing variability in treatment fidelity. One study [39] reported on the use of a random selection of session video recordings to verify treatment adherence. However, this was not quantified.

The majority of studies [26, 27, 29, 31-33, 39-42] employed a practice diary monitoring the frequency and duration of participants' mindfulness practice.

Discussion

Our findings suggest that MBSR results in significant reductions in symptoms of stress, anxiety and depression thus replicating previous findings [11-15, 18]. Furthermore, although I only identified six studies investigating the impact of MBSR on physical aspects of health, all of these studies reported significant changes following treatment. Our findings expand on previous findings by suggesting that MBSR has a statistically significant effect on spirituality.

To the reviewers' knowledge, this is the first paper that systematically assessed the quality of reporting within the MBSR literature by employing a standardised trial reporting assessment tool. The findings evidence considerable systematic variability in reported study features including diversity in treatment fidelity, study design,

⁴ Of late, the University of Massachusetts Medical School is offering a certified MBSR trainer programme (<http://www.umassmed.edu/Content.aspx?id=41322&linkidentifier=id&itemid=41322>; page visited March 2008)

client populations, outcome measures, and control conditions. In the ensuing paragraphs I will discuss these issues in turn.

The appropriate administration of an intervention is a necessary precursor for its evaluation [45]. Several methods have been discussed to enhance treatment integrity including the thorough training of trainers and the implementation of treatment adherence monitoring (e.g. audio- or video taped). Our findings replicated previous findings by Bear [11] who highlighted shortcomings of insufficient reporting of trainers' expertise and training delivery. However, this review also reported noteworthy developments in recent years, as three out of five randomised controlled trials published within the last two years reported trainers being accredited and one study described sessions being video-taped.

The majority of studies examined the effect of MBSR employing a pre-post measurement design without adequate control condition or follow-up period. Again, our findings confirmed previous observations [1, 11]. In the light of these findings, it is difficult to reach firm conclusions regarding the relative efficacy of MBSR compared to alternative treatment interventions. Furthermore, few studies reported data from a follow-up period. Consequently no reliable conclusion can yet be reached regarding the maintenance of treatment gains. On a positive note, of the studies reporting follow-up data, the majority reported persisting or improving changes on psychological outcome measures following treatment. This observation can perhaps be accounted for by changes in participants' relationship to their experiences. Plews-Ogan surmised that *'with MBSR, patients learn life skills, and the beneficial effects of this can conceivably grow rather than diminish over time'* [36, p. 1138].

Regarding the diversity in the sample populations, our findings report an increase of controlled studies with patient populations with a physical health complaint compared to previous observations by Bishop [1]. Similarly to the previous argument, the paucity of controlled studies with patients with mental health difficulties and from clinical in-patient settings raises questions regarding the generalisability of these findings.

A noteworthy finding concerns the concept of mindfulness as an integral aspect of the MBSR programme. I identified one study that employed a standardised mindfulness outcome measure. Moreover, the study reported non-significant changes following treatment on this measure. This finding is significant on two counts. Firstly, it highlights the apparent absence of evidence on the effect of MBSR on mindfulness. Secondly and without overstating the relevance of one non-significant reporting, the result calls into question the role of mindfulness practice as the mechanism for the symptomatic improvements. Toneatto [16] has thus called for further research into the extent and quality of mindfulness practice. Conversely it might be argued that the monitoring of mindfulness practice, as employed by the majority of the reviewed studies, presents an ecological measure of mindfulness. However, studies that assessed mindfulness practices and correlated these with outcome measures did not find support for the amount of mindfulness practice [16]. It has been suggested that to evaluate the unique efficacy of this intervention, researchers will need to ensure that their research design is able to validly measure the practice of mindfulness during and between treatment sessions [16]. Expanding on this suggestion, research would benefit from not only assessing mindfulness practice but also changes related to mindfulness practice. In other words changes that are in accordance with core aspects of mindfulness.

The aim of this review has been to provide clinicians with evidence to inform clients' care. Thus, it is important to cast the findings of this study in the light of their clinical significance. Our findings suggest that at present, researchers have not adapted a single definition of what constitutes clinically significant change concerning the employed outcome measures. It is thus conceivably difficult to appraise the statistical significance of findings in terms of their clinical relevance. Future studies might benefit from employing reliable change indices to support clinicians in their appraisal of clinically meaningful changes secondary to MBSR practice.

The review draws attention to the apparent paucity of controlled studies that utilise an adequate control condition. Moreover, findings from the few identified studies suggest that symptoms do not reliably improve following treatment. This is particularly the case when compared with an active control condition. Alternatively, the absence of studies with a credible control condition may also be understood as uncertainties amongst clinicians as to what constitutes essential treatment components. This also highlights the close inter-relatedness of treatment components research and research on the comparative effectiveness of MBSR. In other words, it is conceivably difficult for researchers to create valid experimental designs in the context of uncertainties surrounding what are integral treatment components of mindfulness-based treatment interventions. Thus, related to the previous suggestion, future research would benefit from incorporating active control conditions, which are in keeping with currently discussed component models of mindfulness [6].

Findings from this review need to be appraised in the context of several limitations. Firstly, the review evaluated published articles only. This consequently raises issues regarding the generalisability of findings to the general population. It is however likely to assume, that the reported findings are representative as they appear to

confirm results of previous studies. Secondly and following on from this issue, although efficacy studies (i.e. RCT) comprise potentially powerful research designs, other non-randomised designs also have their place, particularly when using naturalistic client populations and implementing treatments into ecological valid environments. Thus by reviewing RCT's only and by adopting a standardised quality assessment grid the generalisability of my findings is somewhat limited. However, *'different research designs have complementary strengths and weaknesses —no single design provides a "royal road" for evaluating therapy outcomes'* [46, p. 159]. Furthermore, assessing the quality of reporting by using a standardised quality grid reduces the variability of random effects introduced by an otherwise subjective appraisal of selective aspects of studies. Instead, the employed method explicated components and processes of appraising by assigning specific weights to certain aspects of studies. One would need to be mindful, however, that 'reporting quality' does not equate to 'study quality'. The quality of reporting appears to be a conservative estimate for the latter. A study may omit to report significant quality aspects (e.g. randomisation process, rater-blinding), however, the opposite is not likely to occur (i.e. reporting of aspects which have not been adopted).

Kabat-Zinn (2002, p. 731) asserted that *'the jury is still out on the degree to which mindfulness can influence physical, psychological, or spiritual health'*. Six years later the same conclusion appears to remain valid.

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Tables

Study	Sample (Completion Rate in %)	Recruited	Sample	Outcome Measures	Outcome Domains	Results
[26] Astin, 1997	28 (68)		Students	SCL90-R SCI INSPIRIT	Psychological Spiritual	Significant reduction in symptoms of anxiety and depression. GSI reduced by 64% in MBSR group compared to 11% in control group. Positive changes for sense of control but not statistically significant. Statistically significant increase in spirituality in MBSR group.
[27] Kabat-Zinn, 1998	37 (100)		Outpatients with psoriasis	SCL90-R STAI Clin. assessment of skin condition	Psychological Physical	Significant reduction in skin clearing (adjusted time difference in 50% skin clearing were 30 to 40 days). Changes in General Severity Index and State Anxiety Scores were non-significant.
[28] Shapiro, 1998)	78 (94)		Premedical and medical students	ECRS SCL90-R STAI INSPIRIT	Psychological Spiritual	Significant reduction in symptoms of depression, state anxiety, trait anxiety; significant increase in empathy and spirituality.
[29, 30] Speca, 2000; Carlson, 2001	99 (91)		Outpatients with cancer	POMS SOSI	Psychological Physical	Significant reduction in symptoms of anxiety, depression, anger and stress. Overall reduction of stress symptoms of 31 % and of mood disturbance of 65% in MBSR group.
[31] Williams, 2001	103 (56)		General community sample	DSI SCL90-R MSCL	Psychological Physical	Significant reduction in symptoms of psychological distress (44%), medical symptoms (46%) and daily hassles (24%)

[32]	Weissbecker, 2002	91 (67)	Female community sample with fibromyalgia	OLQ FIQ PSS BDI	Psychological Physical	Significant increase in sense of coherence (SOC). SOC was statistically correlated with reduction in stress and depression symptom reporting. However, SOC was not statistically significant related to physical functioning or fibromyalgia symptom reporting.
[33]	Davidson, 2003	48 (85)	Healthy biotechnical company employees	EEG PANAS STAI Blood draws	Psychological Physical	Significant reduction in trait anxiety symptoms over time in the meditation group. No significant change on positive and negative affect scale. Significant increase in left-side anterior activation and anti body titers to influenza vaccination.
[34, 35]	Tacon, 2003; Robert-McComb, 2004	20 (90)	Female community sample with cardiac diagnoses	STAI CECS PF-SCO MHLC	Psychological	Significant reduction in state anxiety symptoms and reactive style of coping. Significant increase in emotional control. No significant changes on the health locus of control measure.
[36]	Plews-Ogan, 2005	30 (77)	Outpatients with musculoskeletal pain	SF-12 Idiosyncratic pain rating	Psychological	No significant reduction in subjective pain ratings. No significant reduction in global health immediately after completion but improved global mental health scores 4 weeks following completion.
[37]	Shapiro, 2005	38 (74)	Healthy health care professionals	BSI MBI SWLS SCS	Psychological	Significant changes in perceived stress and self-compassion. No significant changes in satisfaction with life, burnout sensation and psychological distress.

[38] 2006	Mackenzie, 30 (100)	Healthy nurses and nursing aides	MBI JSS SWLS OLQ	Psychological	Significant reduction of symptoms of emotional exhaustion and depersonalization. Significant increase in relaxation and life satisfaction. No significant changes on personal accomplishment, sense of coherence and job satisfaction measures.
[39] 2007	Koszycki, 59 (77)	Outpatient sample with diagnosis of social anxiety disorder	SIAS IPSM SPS BDI-II LSRDS QoLI	Psychological	Although patients in both treatment conditions improved, patients in the active control condition (CBT) had significantly lower scores on social anxiety measures, as well as on response and remission rates. Both interventions were comparable in improving mood, functionality and quality of life.
[40] 2007	Pradhan, 63 (84)	Outpatients with rheumatoid arthritis	SCL90-R DAS28 PWS MAAS	Psychological	No significant differences on any of the outcome measure (i.e. depressive symptoms, psychological distress, well-being, mindfulness, disease activity) at 2 months. At 6 months significant differences on psychological distress (p=0.04) and well-being (p=0.03).
[41] (2007)	Sephton 91 (75)	Female community sample with fibromyalgia	FIQ, SSS BDI Idiosyncratic rating	Psychological Physical	Significant reduction in depressive symptoms. Secondary analysis revealed significant changes on somatic but not on cognitive symptoms of depression.

[42] 2008	Morone, 37 (81)	Older adults community sample with chronic lower back pain	MPQ-SF SF36 CPAQ RMQ	Psychological	Significant changes of pain acceptance (p=0.008) and physical functioning (p=0.03) [SF36]. No significant changes on pain, physical functioning [RMQ] and quality of life measures.
[43]	Oman, 2008 47 (94)	College students	PSS RRQ HFS ADHS	Psychological	No significant difference between MBSR and active treatment condition on perceived stress, rumination, forgiveness and hope. However, MBSR demonstrated significant benefit on stress (p<0.05) and forgiveness (p<0.05) compared to a waiting list control condition.

Table 1: Overview of the RCT's included into the review.

(Indices of outcome measures in alphabetical order: **ADHS**-Adult Dispositional Hope Scale; **BDI**-Beck Depression Inventory; **BSI**-Brief Symptom Inventory; **CECS**-Courtauld Emotional Control Scale; **CPAQ**-Chronic Pain Acceptance Questionnaire; **DAS28**-Disease Activity Scale 28; **DSI**-Daily Stress Inventory; **ECRS**-Empathy Construct Rating Scale; **EEG**-Electro Encephalogram; **FIQ**-Fibromyalgia Impact Questionnaire; **FIS**-Fibromyalgia Impact Scale; **HFS**-Heartland Forgiveness Scale; **INSPIRIT**-Index of Core Spiritual Experiences; **IPSM**-Interpersonal Sensitivity Measure; **JSS**-Job Satisfaction Scale; **LSRDS**-Liebowitz Self-Rated Disability Scale; **MAAS**-Mindfulness Attention Awareness Scale; **MBI**-Maslach Burnout Inventory; **MHLC**- Multidimensional Health Locus of Control; **MPQ-SF**-McGill Pain Questionnaire-Short Form; **MSCL**-Medical Symptom Checklist; **OLF**-Orientation to Life Questionnaire; **PANAS**-Positive and Negative Affective Scale; **PFSOC**-Problem-Focused Style of Coping Measure; **POMS**-Profile of Mood States; **PSS**-Perceived Stress Scale; **PWS**-Psychological Well-Being Scale; **OLQ**-Orientation to Life Questionnaire; **QoLI**-Quality of Life Inventory; **RMQ**-Roland and Morris Questionnaire (physical functioning); **RRQ**- Rumination and Reflection Questionnaire; **SCI**-Shapiro Control Inventory; **SCL90-R**-Hopkins Symptom Checklist 90(Revised); **SCS**-Self-Compassion Scale; **SF-12**-Short Form Health Survey; **SF36**-SF-36 Pain Scale; **SIAS**-Social Interaction Scale; **SOSI**-Symptoms of Stress Inventory; **SPPB**-Short Physical Performance Battery; **SPS**-Social Phobia Scale; **SSS**- Stanford Sleep Scale; **STAI**-State-Trait Anxiety Inventory; **SWLS**-Satisfaction With Life Scale)

Table 2

Study	Practice Adherence Check	Delivery Adherence Check	CTAM	Active Control	CSC	Follow-up Changes
[26] 1997	Astin, Practice diary	Delivered by researcher with extensive training and experience in stress management and meditation.	35	--	--	No changes between post and follow-up scores (i.e. after 4 to 7 months following completion) but change between pre- and follow-up GSI score no longer significant.
[27] 1998	Kabat-Zinn, --	Intervention incorporating use of tapes.	68	--	--	Pre-post only
[28] 1998	Shapiro, Practice diary	--	48	--	Discussed for spiritual experience	Pre-post only
[29] 2000	Specia, Practice diary	--	53	--	--	Pre-post only
[31] 2001	Williams, Practice diary	-	65	--	--	Psychological distress was non-significant post-treatment (p=0.06) but became significant at 3 months follow-up (p=0.05).
[32] 2002	Weissbecker, Session attendance log	--	44	--	--	Pre-post only
[33] 2003	Davidson, Practice diary	Delivered by author of MBSR	32	--	--	Positive emotion induction was significant at completion (p=0.05) but no longer significant at 4 months (p=0.07) whereas negative emotion induction and left anterior brain activation was non-significant at completion but significant at 4 months follow-up.
[34] 2003	Tacon, --	--	32	--	--	Pre-post only

[36]	Plews-Ogan, 2005	--	Home work assignment was listening to tapes	45	√	--	Changes in mental health non-significant post-treatment but became significant at 1 months follow-up (p=0.04).
[37]	Shapiro, 2005	--	Experienced MBSR practitioner	30	--	--	Pre-post only
[38]	Mackenzie, 2006	--	Home work assignment was listening to tapes	35	--	--	Pre-post only
[39]	Koszycki, 2007	Attendance reported but not quantified	Experienced MBSR practitioner, fidelity check using videotaped sessions	83	√	Discussed in relation to effect size on avoidance, anxiety, social interaction, quality of life and depression.	Pre-post only
[40]	Pradhan, 2007	Practice diary	Certified teachers; MBSR tape guided home work assignment	76	--	Discussed for psychological distress	Non-significant results at completion but at 4 months follow-up, results became significant for psychological distress (p=0.04) and psychological well-being (p=0.03).
[41]	Sephton, 2007	Attendance log	Certified teachers; MBSR	53	--	--	Significant reduced depressive symptoms remained at 2 months follow-up.
[42]	Morone, 2008	Practice diary	Certified teachers; MBSR	53	--	Discussed for pain.	No significant difference between post-treatment and 1 months follow-up scores.
[43]	Oman, 2008	--	--	58	√	Discussed for stress.	Pre-post only

Table 2: Aspects of heterogeneity in the reported studies.

CTAM-Clinical Trial Assessment Measure; CSC-Clinically Significant Change; Follow-up duration refers to time period from the start of the intervention to the time of the assessment

Figures

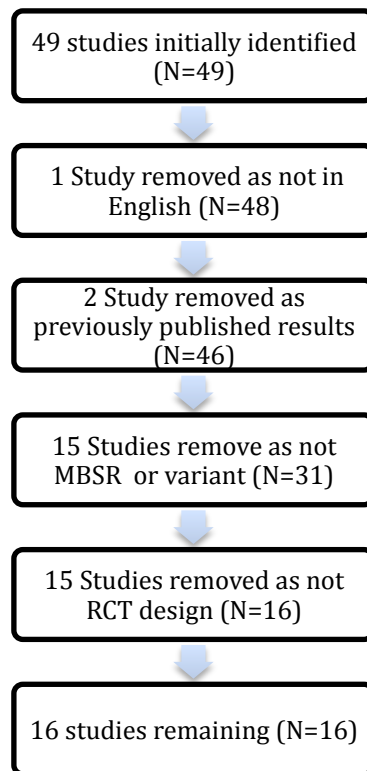


Figure 1: Search path diagram.

**The Relational Compassion Scale: Development and
Validation of a new self rated Scale for the Assessment of
Self-Other Compassion**

Prepared in accordance with the requirements for submission to

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(See Appendix 2.7)

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Abstract

Objective: Previous research on the assessment of compassion focussed on self-reported self-compassion measures. This study reported on the development and evaluation of a new compassion scale that expands the previous conceptualisation by incorporating relational aspects of compassion.

Methods: In an online study, 201 participants completed the relational compassion scale and a random sample of four questionnaires comprising measures of self-compassion, emotional approach coping, self-attacking/self-criticism and attachment. Moreover, the criterion-based validity of the scale was tested with an extreme group comparison design for which 30 Arts and Engineering students were recruited.

Results: Consistent with a relational conceptualisation of compassion, findings supported a four-factor structure of the measure. Furthermore, the scale was positively correlated with measures of self-compassion, emotional approach coping, reassured self and a secure attachment style. However, the self to other compassion factor of the scale did not correlate with the self-attacking/self-criticism scale.

Conclusions: Findings suggest that compassion can be conceptualised from within a relational framework. Moreover, this study indicates a need for further research investigating the relationship between self- and other-compassion in clinical samples and the interaction between different affect regulation systems.

Key words: relational compassion, social mentality theory, affect regulation.

Introduction

Self-Criticism and Shame

Self-criticism and shame have long been recognised to influence the emergence and course of psychopathology (Wicker *et al.*, 1983; Tangney *et al.*, 1996; Hayaki *et al.*, 2002; Gilligan, 2003; Zuroff, 1994). Some researchers have argued that early maladaptive patterns of parent-child interactions may be the source of shame-based psychopathologies in adult life (Kaufman, 1989; Loader, 1998; Nathanson, 1987). Research suggests that when people feel insecure, they may adapt safety strategies including heightened self-monitoring and self-criticism in order to meet other people's expectations of the self. This may be particularly the case in the context of more powerful and critical others (Bowlby, 1980; Gilbert, 2001, 2005; Gilbert & Irons, 2004a, 2005; Gilbert *et al.*, 2004b, 2006).

Gilbert and Procter (2006) noted that the pathogenic qualities of self-criticism and shame might be related to two key processes. The first relates to the degree of self-directed hostility, contempt and self-loathing that permeates self-criticism (Gilbert, 2000; Whelton & Greenberg, 2005). The second is linked to the relative inability to generate feelings of self-directed warmth, soothing, reassurance and self-liking (Gilbert, 2000; Gilbert *et al.*, 2004b; Linehan, 1993; Neff, 2003a; Whelton & Greenberg, 2005). The self-critical processes can serve a number of functions (Driscoll, 1988) including self-correction or taking revenge on the self.

Compassionate Mind Training

Rector and colleagues (2000) suggested that highly self-critical people may fare less well with standard cognitive behavioural therapy for depression. However, the degree to which self-critical thinking can be modified is important to outcome.

Compassionate Mind Training (CMT) was developed for people with severe shame and self-attacking problems (Gilbert, 2005). Although reducing self-directed hostility is important to help people with high shame and self-criticism problems, CMT also focuses on developing abilities to generate feelings of self-reassurance, warmth and self-soothing that can act as an antidote to the sense of threat.

CMT seeks to alter the way people respond to threatening stimuli by affecting the internalised dominating/self-attacking style and replace it with a caring, compassionate way of being with one's own distress (Gilbert & Procter, 2006). As such CMT does not aim to target specific core beliefs or schemata per se, but instead seeks to alter a person's whole orientation to the self and relationships. Gilbert and others (Gilbert, 2005; Wang, 2005) have noted that compassion from other people can create internal conditions for feelings of safeness and soothing. These conditions in turn can help deactivate threat and self-protective strategies, and facilitates internal conditions conducive to growth, maturation, change, healing and well-being (Wang, 2005).

CMT's theoretical underpinnings are rooted in the evolutionary model of social mentality theory (Gilbert, 2000, 2001, 2005). As such it asserts that humans aim to co-create different role relationships including careseeking-caregiving, dominant-subordinate, sexual and cooperative role relationships (Liotti, 2007). There is growing evidence to suggest that different social signals activate distinct brain and

physiological systems. For instance affection signals can activate the oxytocin mediated affiliation/self-soothing system, while aggressive signals can activate the serotonin mediated threat-focussed systems (Gilbert, 2005; Depue & Morrone-Strupinsky, 2005).

Gilbert posits (2005) that compassion emerges from the care-giving mentality. This mentality can perhaps be loosely delineated by the recruitment of a co-assembling pattern of motives (e.g. for care), emotions (e.g. empathy, sympathy, concern), and information processing competencies (e.g. theory of mind) that are attentive to and analyse the needs of the other.

Compassion Measure

The psychometric measurement of compassion has relied on Neff's Self-Compassion Scale (Neff, 2003b) as the only currently validated compassion assessment tool. The development of the Self-Compassion Scale was informed by social psychology and Tibetan Buddhism. Mounting evidence suggests that the scale positively correlates with indices of mental well-being (Neff, 2003a, 2003b; Neff *et al.*, 2005, 2007). Self-compassion (Neff, 2003b) is surmised to entail three main components; namely self-kindness, common humanity and mindfulness. Self-kindness refers to a kind and understanding attitude to negative experiences. Common humanity relates to the notion that suffering and pain are part of a shared human condition rather than a separating and isolating experience. Mindfulness refers to the capacity to hold experience in balanced awareness without over-identifying with it. Neff further posits that self-compassion is related to the more general notion of compassion. She asserts

that '*self-compassion tends to enhance feelings of compassion and concern for others*' (Neff, 2003a, p. 87).

However, Neff's self-compassion measure suffers from both conceptual and methodological limitations. Conceptually, the measure does not distinguish between self- and other-compassion; a useful differentiation as suggested by Allen and Knight (in Gilbert, 2005). Furthermore, as the scale aims to assess self-compassion it precludes the exploration of the empirical question of whether the development of self-compassion indeed enhances other-compassion. Thus, although research suggests self-compassion to be a *necessary* aspect of a clinically meaningful compassion scale, the findings do not support the conclusion that self-compassion *sufficiently* comprises all aspects of compassion.

Regarding the methodological limitations, evaluating the construct validity of the scale, Neff (2003a) compared two different models (i.e. a six-factor model versus a single factor model). The reported findings seem to suggest that the six-factor model best approximated the data. In spite of this, however, Neff asserts that a single self-compassion factor may be constructed from item responses. It is as yet unclear whether data could perhaps be better represented by a nested model of self-compassion (i.e. six primary factors loading onto a general self-compassion factor).

In summary, severe shame and self-criticism has been linked to the emergence and maintenance of certain psychopathologies. CMT might hold promise in alleviating distress in people suffering from shame and self-criticism related problems. As an integral treatment component of CMT, compassion might provide an antidote as it both promotes affiliating role relationships and reduces the activation of dominant-subordinate role relationships thus employing what Zeki (2007) described as a 'push-

pull mechanism'. Current conceptualisations of compassion highlight the role of self-other relating in the emergence and development of this social mentality. However, at present there is no measure available assessing this aspect of compassion. The aim of this study was therefore to develop and validate a new Relational Compassion Scale.

Methods

Participants and Procedures

Two samples were used to validate the Relational Compassion Scale. A total of 201 participants completed the online version of the scale (mean age 31.1 years; SD = 11.9). Additionally, 30 Arts and Engineering students completed a paper and pencil version of the scale (mean age 27.3 years; SD = 7.5). The demographic characteristics of both samples are described in Table 1 and 2.

[Insert Table 1 and 2]

The pilot version of the scale was evaluated using an internet-based version of the questionnaire. After being translated into a web-based format, the questionnaire was hosted on a designated project website⁵. The link to the internet-based questionnaire was disseminated via adverts using Google's AdWord. Additionally, the link was circulated amongst undergraduate students reading Medicine at one of the main universities in Scotland. This was indicated to recruit a sufficiently large participants sample to employ factor analytic methods.

No specific power calculation was carried out, as no such estimate exists for factor analytic methods. However, sample size suggestions were taken into account (MacCallum *et al.*, 1999). Exogenous variables were tested for normality distribution (Kolmogorov-Smirnov test). Moreover, an extreme group design was employed to explore the concurrent criterion validity of the test.

⁵ The website was hosted on www.compassionstudy.org.uk and was accessible from 01/11/07 to 30/04/08.

Measures

Relational Compassion Scale (RCS)

Items for the Relational Compassion Scale (RCS) were generated in discussions with a reference group comprising both clinicians and researchers with an interest in compassion research (see Appendix 2.1). An item grid matrix (Rust, 1989) guided the generation of the initial item pool. Overall 40 items were generated. Item responses were rated on a 4-point Likert scale (see Appendix 2.2). Items were designed to be understandable (Flesch Reading Index ~60; Flesch, 1948), gender neutral and directionally balanced to control for potential response biases. Remaining ambiguities were resolved in discussions with the reference group.

The scales employed to validate the RCS have been used in previous studies (Neff, 2003b; Gilbert, 2005) to estimate the expression of compassion and related concepts.

Self-Compassion Scale (SCS)

The Scale (Neff, 2003b) is a 26-item questionnaire, which has been developed to assess self-compassion. The items responses are coded on a 5-point Likert scale. The questionnaire has been validated (Neff, 2003b) and the results are positively correlated with positive mental health outcomes such as fewer depressive and anxiety episodes and greater life satisfaction. The internal consistency reliability obtained for this measure was $r = .94$ (Neff, 2003b).

The Emotional Approach Coping Scale (EACS)

The Scale (Stanton *et al.*, 2000) utilises two 4-item Emotional Approach coping questionnaires developed by Stanton and colleagues (2000)—Emotional Processing (e.g., “I take time to figure out what I’m really feeling”; “I delve into my feelings to get a thorough understanding of them”) and Emotional Expression (e.g., “I take time to

express my emotions”; “I feel free to express my emotions”). The questionnaire has demonstrated sound internal consistency and predictive validity (Stanton *et al.*, 2000).

Self-Criticizing/Attacking & Self-Reassuring Scale (SCSRS)

The Scale was developed by Gilbert and colleagues (2004) to measure people's critical and reassuring self-evaluative responses to setback or disappointment. Item responses are coded on a 5-point Likert scale. Gilbert and colleagues (2004) found that these questionnaires were significantly correlated with the levels of self-criticism (Thompson & Zuroff, 2000).

Relationship Styles Questionnaire (RSQ)

The questionnaire (Griffin & Bartholomew, 1994) was developed to ascertain self-reported feelings about close relationships. The item responses are coded on a 5-point Likert scale. Contrary to the initially proposed four-factor structure, Kurdek (2002) reported data suggesting a two-factor structure of the measure; a finding that has recently been confirmed by MacBeth and colleagues (2008). I have therefore reported both scale conceptualisations.

Models

Figures 1 to 3 represent the *a-priori* conceived relational compassion models.

[Insert Figure 1-3]

Data Analysis

Multiple methods were employed to evaluate the scale. A confirmatory factor analysis (CFA) with maximum-likelihood estimation was used to determine which model best approximated the observed data. The model fit was compared against various fit indices, including χ^2/df , goodness-of-fit index (GFI), comparative fit index (CFI), and root mean square error of approximation (RMSEA). According to conventional criteria, an adequate fit would be indicated by $\chi^2/df < 2$, $GFI > .85$, $CFI > .90$, and $RMSEA < .08$ (Arbuckle, 1995; Bentler 1990). For the CFA, no specific power calculation was conducted, as no such estimates exist for factor analytic methods. However, I aimed to recruit a minimum of 200 participants for the online study in keeping with suggestions by MacCallum and colleagues (1999).

Parametric correlations were calculated to assess the convergent and discriminant validity of the RCS. Cohen (1992) recommends recruiting 68 participants to obtain a medium correlation (i.e. $r=.3$) significant. The test power is assumed to be .8 with an alpha error of .1. More progressive testing seems to be justified, as I was interested in discovering differences at an initial stage of the scale validation.

To compare the means of the extreme groups, t-test for independent samples were calculated. Once again the minimum sample size assumed a medium affect size for the mean differences. This seems justified on two counts. Firstly, to the author's knowledge, no preliminary data exist to estimate the effect size of the mean differences between the tested extreme groups. Secondly, the variation observed between female and male participants in previous studies on empathy measures varied between small ($d=.2$) and large ($d=1.3$) effect sizes (Baron-Cohen, 2005). Cohen (1992) suggests that 50 participants will need to be recruited to get a medium

mean difference significant. The test power is assumed to be .8 with an alpha error of .1.

Results

Scale Development

The goodness-of-fit statistics for the three competing models are represented in Table 3.

[Insert Table 3]

As Table 3 illustrates none of the preconceived models sufficiently fitted the observed data. However, the results suggested that model 3 (i.e. the four-factor model) best approximated the observed data structure. To further refine the scale, I firstly removed items with low item inter-correlations (i.e. .2 or lower). I subsequently removed items with low squared multiple correlations with their respective factor retaining five items per factor. At a final stage, ambiguous items were removed (i.e. items with significant factor loadings on non-target factors). The list of retained items with their respective standardised regression weights per factor is presented in Table 4. The goodness-of-fit indices of the final scale suggest an acceptable fit for the refined RCS scale (Table 3).

[Insert Table 4]

The Cronbach's alphas for the RCS factors ranged from acceptable to good ($r = .74-.84$). Similarly, the split-half coefficients for the RCS factors ranged from acceptable to good ($r = .70-.82$).

Table 5 represents the factor inter-correlations, which ranged from .17 to .45.

[Insert Table 5]

Convergent and Discriminant Validity

To validate the measure the authors converged the RCS with self-rated scales of Self-Compassion (SCS; Neff, 2003b), Emotional Approach Coping (EACS; Stanton *et al.*, 2000), Self-Criticizing/Attacking & Self-Reassuring (SCSRS; Gilbert *et al.*, 2004) and Relationship Styles (RSQ; Griffin & Bartholomew, 1994).

The correlations between the RCS and the EACS are presented in Table 6. All but the correlations between the other to other compassion factor (OO factor) and the EACS were significant and positive. The strongest significant correlation was observed between the self to self compassion factor (SS factor) and Emotional Expression ($r_p=.51$, $p<.01$) whereas the weakest significant correlation was observed between the other to self compassion factor (OS factor) and Emotional Processing ($r_p=.23$, $p<.05$). Effect sizes for the observed correlations ranged from small to large (Cohen, 1992).

[Insert Table 6]

Similarly, the RCS and the SCS were positively correlated (see Table 6). The strongest correlation was observed between the SS factor and Self-Compassion ($r_p=.65$, $p<.01$). The weakest correlation was observed between the self to other compassion factor (SO factor) of the RCS and the Self Compassion ($r_p=.24$, $p<.05$). Again, correlations were suggestive of effect sizes ranging from small to large (Cohen, 1992).

The RCS factors correlated negatively with the Inadequate Self and Hated Self factors of the SCSRS (see Table 6). The RCS factors correlated positively with the Reassured Self factor of the SCSRS. Of note is that the SO Compassion factor of the RCS did not correlate with any factor of the scales of the SCSRS. Significant correlations were overall indicative of medium effect sizes (Cohen, 1992).

Both, Bartholomew's (1994) and MacBeth and colleagues' (2008) factor structures are reported in Table 6. Compared to previous findings presented in this paper, the correlations between the RCS and the RSQ were more heterogeneous. The RCS correlated positively with a secure attachment style. Moreover, the RCS factors correlated negatively with an anxious and avoidant attachment style. However, correlations were only significant between the avoidant attachment style and the OO, the OS and the SO factor. Additionally, correlations between the anxious attachment style and the OS and the OO factors were also significant. Effect sizes for the correlations varied from small to medium (Cohen, 1992).

Criterion Validity

Lastly, findings from the extreme group comparison suggest that the RCS differentiated Arts from Engineering students ($t(30) = 3.1, p < .01$); the t statistic being suggestive of a medium effect size ($d=.56$) (Cohen, 1992; Rosnow & Rosenthal, 2003).

Auxiliary Analyses

Further *a-posteriori* analyses appeared to be indicated in view of the somewhat surprising finding that the SCSRS did not correlate with the SO factor on the RCS. Initial analyses focussed on methodological issues (e.g. poor psychometric features of the scales or a measurement artefact secondary to the cohort recruited, or both).

Initially, I investigated the item-response characteristics of the SO factor of the RCS. The item characteristics suggested a ceiling effect in the online sample. The mean and standard deviation (median, range) for the sum score of the SO factor were 16.9 and

2.85 (18.0, 8-20). However, no ceiling effect was observed in the Engineering students sample (N = 20). The mean and standard deviation (median, range) for the Engineering student sample was 15.5 and 2.62 (15.5, 10-20). However, this secondary finding may partially be accounted for by the fact that Engineering students generally rated themselves as less compassionate compared to Arts students.

Regarding the psychometric features of the SCSRS, I investigated the convergent validity of the scale on another compassion scale (i.e. SCS; Neff, 2003b). The findings supported the validity of the SCSRS as the correlations were in keeping with what would have been expected ($r_p = -.57 - .77, p < .01, N = 25$).

Regarding the second issue, I investigated the relationship between the SCSRS and the SO Compassion factor of the RCS within different subgroups in the online sample. The rationale being that the item response-patterns may have been an artefact of a predominately female, professional sample. However, the correlation pattern remained non-significant in male-only and non-professional groups.

In summary, albeit the item-responses indicated a ceiling effect in the online sample, the same effect was not reliably observed in all samples (i.e. engineering students). Furthermore, the SCSRS performed as expected in relation to another compassion scale (SCS; Neff, 2003b) thus supporting the validity of the former scale. Lastly, similar correlations between the SO factor and the SCSRS were observed for different study subpopulations in the online sample (i.e. male only, non-professionals). Thus, I did not identify any systematic methodological variations, which might have accounted for the observed correlation patterns.

I subsequently explored whether the findings might be understood in the context of an activation of competing social mentalities (i.e. dominant-subordinate versus compassion/affiliation social mentalities). In other words, I hypothesised that the task of appraising self-critical and self-attacking statements might have activated participants' threat-focussed affect regulation systems. This in turn might have impacted on participants' capacity to respond compassionately to RCS statements. Unfortunately, no data were recorded to discern the order in which tests were administered. However, results from the *a-posteriori* analysis revealed that participants self-reported more compassion towards others ($t_{00}(199) = 2.15, p < .05$; $t_{S0}(199) = 1.98, p < .05$) when both the RCS and the SCSRS were administered as opposed to when the RCS and other scales were administered.

Discussion and Conclusion

General Findings

In the context of a current emphasis on the notion of self-compassion, this study aimed to expand the methodological and clinical framework of compassion by developing and evaluating a novel relational compassion scale (RCS). To evaluate the psychometric features of the RCS the authors report findings concerning both the validity and reliability of the scale. More specifically, the RCS has been evaluated to ascertain its content-, construct- and criterion-based validity as well as its reliability.

The authors employed a structured process (i.e. grid matrix; Rust, 1989) during the development of the scale to ensure the content validity of the RCS. In addition, the comprehensiveness of the item pool was verified in consultations with a reference group. Thus content validity of the scale can be assumed as appropriate efforts were made to ensure that the item sample adequately covered the different aspects of relational compassion.

To establish the RCS's construct validity more complex considerations were warranted. Firstly, factor analytic methods confirmed that item responses could be conceptualised in terms of relational aspects of compassion. Indeed, I found item responses to be suggestive of a four relational compassion factor structure namely self to self (SS), self to other (SO), other to other (OO) and other to self (OS) compassion. In other words, all reported fit indices met the *a-priori* explicated standards suggesting an acceptable model fit. Moreover, the factor inter-correlations suggested that the different relational factors were sufficiently different to be

conceptualised separately. Thus, overall findings from factor analytical and correlation analyses suggested that the scale has an acceptable internal validity.

Secondly, I considered the convergent and discriminant validity of the scale by investigating patterns of relationships between the RCS and related constructs. Emotional approach coping as assessed by the Emotional Approach Coping Scale (EACS) has been related to positive psychological adjustment. As the RCS's compassion conceptualisation entailed the notion of distress tolerance and distress sensitivity as well as care-giving, I expected the RCS to positively correlate with emotional processing and emotional expression. Indeed, the majority of correlations varied between acceptable to good (Barker *et al.*, 2002). The somewhat weaker correlations between the OS and the EACS factors can perhaps be understood when taking into account the direction of the relationship. In the OS factor the self is the receiving agent of compassion. As the EACS measures expressive coping of the self, it is likely to correlate weaker with a factor representing receptive aspects of emotional coping (e.g. receiving compassion). Of note is further that the OO factor did not correlate with the EACS factors. However, as the EACS assessed emotional coping of the self only, one would expect no correlations between the EACS and a factor assessing other to other relating; a finding supporting the discriminant validity of the scale.

Regarding the relationship between the RCS and the Self-Compassion Scale (SCS), I expected the correlations to be positive. All observed correlations between the RCS and the SCS were positive. As expected, the strongest correlation, which can be classified as good ($r=.65$) (Barker, 2002), was observed between the SS factor and the SCS. Conversely, the findings that the SS factor and the SCS did not correlate higher, as they seemingly measure a similar aspect of compassion, may be accounted for by the

fact that the SCS entails aspects, which are not part of the RCS (i.e. common humanity). The weaker correlations between the other RCS factors and the SCS varied from marginal to acceptable ($r=.24-.37$). Thus one might argue that although the concepts appeared to be related, results also suggested that the RCS factors are sufficiently different from self-compassion to express complementary aspects of compassion.

The literature presented in the introduction illustrates the antagonistic relationship between threat-based versus affiliation-based social mentalities. In keeping with this literature our findings suggested corresponding correlations between the RCS and the SCSRS. The finding that the SO factor did not correlate with the SCSRS may have been suggestive of the activation of a different social mentality, which compounded the compassion system. This conclusion was subsequently corroborated by *a-posteriori* analyses. Results suggested a distinct response pattern between the group of participants who replied to both the SCSRS and the RCS and participants who replied to the RCS but were not presented with the SCSRS.

Regarding the correlations between the RCS and the RSQ, findings have been more heterogeneous. In keeping with a relational model of compassion all RCS factors correlated positively with a secure attachment style. Thus our findings are in keeping with Gillath and colleagues' (2005) assertion that securely attached people's positive models of the self and others foster empathic compassion. However, the correlations between the RCS factors and factors assessing insecure attachment styles were more heterogeneous. Although the direction of the relationship were in keeping with expectations (i.e. negative), the majority of correlations were non-significant. The latter observation was particularly the case when the self was the expressive agent (with one exception of a marginally significant correlation between avoidance

attachment style and the SO factor). Gillath and colleagues (2005) surmised that people with an insecure attachment style might find it more difficult to respond compassionately to distress in others. Thus, findings may once again be suggestive of interactions between competing social mentalities. Interestingly, however, our findings suggested a self-other distinction in anxiously attached people. This observation contradicted previous findings by Mikulincer & Horesh (1999) who reported that a lack in self-other distinction in anxiously attached people impacts on people's capacity to respond compassionately.

Previous research has demonstrated that Arts and Engineering students are likely to differ in their responses on empathy measures (Billington *et al.*, 2003). As empathy is an integral aspect of compassion the RCS successfully differentiated between the two groups. These findings may be suggestive of concurrent criterion validity of the RCS in relation to empathy.

Regarding the reliability of the scale, both the internal consistency and the split-half reliability indicated an acceptable to good reliability of the RCS.

In summary, psychometric findings of the RCS indicated acceptable to good validity and reliability of the measure. Relational compassion appeared to be positively related to constructs of self-compassion, emotional approach coping, secure attachment and a reassured sense of self.

Methodological Limitations

It is of note that the current study only tested models with items correlating with one factor only. This seemed justified as the analysis was informed by *a-priori*

conceptualisations of compassion which were informed by the current literature on compassion (Gilbert, 2005). However, in the light of our findings alternative conceptualisations of compassion are conceivable. Thus, the verified four-factor model of compassion may not represent the only viable model approximating the data. For instance, as the preceding section illustrated, the current model may be expanded by considering the direction of the self-other interaction. In other words, data seemed to indicate that a receptive/expressive relational compassion model might have some merit.

To ensure the generalisability of our findings, I intended to recruit a representative participants' sample. However, the online sample appeared to have some distorted demographic characteristics (i.e. gender, occupation, age). This has potential implications in terms of the construct validity of the scale as a different sample might have given rise to a differing factor structure. However, this is in principal an empirical question that future research might want to address.

At an initial stage in the scale development, I adapted a cross-sectional design to evaluate the RCS. Thus no re-test reliability could be calculated which precludes a conclusion regarding the stability of the scale over time.

Similarly, no data have yet been obtained evaluating the criterion-based validity of the scale concerning clinical meaningful psychopathology. However at this stage, the recruitment of a clinical sample seemed unwarranted on ethical grounds.

Theoretical Implications

The study is related to previous work by Neff (2003a) in its effort to develop a valid and reliable compassion measure. However, the proposed scale expands the self-compassion conceptualisation by taking into account relational aspects of compassion. The scale affords researchers and clinicians with a measure to investigate the relationship between relational compassion and other interpersonal constructs; the significance of which has been recognised by numerous researchers (Gillath *et al.*, 2005; Liotti, 2007).

Furthermore, the current study purports data that tentatively suggested that the directionality of the self-other interaction (i.e. expressive versus receptive) might offer further insight into the relationship between different social mentalities. For instance, our findings suggested that when appraising self-critical/self-attacking statements (SCSRS) respondents were more compassionated towards others (i.e. receptive other interaction) compared to when not exposed to such statements.

Clinical Implications

The development of the RCS allows clinicians to assess and monitor the contribution of other-compassion techniques in compassion-based therapies. For instance, as has been surmised by Allen & Knight (in Gilbert, 2005) the monitoring of compassionate other-relating and its impact on compassionate self-relating may be of particular relevance in clinical work with severely self-critical depressed people.

The study also reported data highlighting the role of safeness in a therapeutic space to foster the development of positive affect regulation systems. Interestingly, such conclusions would be in keeping with traditional meditation practices where the

development of a kind and compassionate self-relating may lay the foundation to recruiting a more robust positive affect regulation system in the context of dominating/critical and/or shaming others.

Exploring the interaction between threat- and affiliation-based social mentalities may also be clinically helpful as it may generate hypotheses about optimal processes in developing and implementing Compassionate Mind Therapy (Gilbert, 2005).

Conclusion

This study proposed a novel relational compassion scale (RSC). Findings suggested that the scale has acceptable to good validity and reliability.

The RCS expands previous self-compassion focused conceptualisations by incorporating self-other relational aspects of compassion. Furthermore, the RCS affords researchers with a tool to investigate the relationship between other interpersonal constructs. Moreover, the RSC allows for the empirical investigation into the relationship between self- and other-compassion.

On a clinical note, the scale allows for the evaluation and monitoring of relational compassion technique (e.g. compassionate imagery) and their impact on alleviating distress in clients.

However, these tentative conclusions warrant further investigations. In this study I have highlighted the need for future research that initially aims to replicate the relational four-factor structure. In addition, alternative conceptualisations may further broaden our understanding of the role and inter-relationships between different social mentalities. Therefore, future research might benefit from testing

alternative conceptualisations (e.g. receptive/expressive relational compassion). Lastly, researchers might inform future clinical practice by establishing the criterion-based validity of the scale within a clinical sample.

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Figures

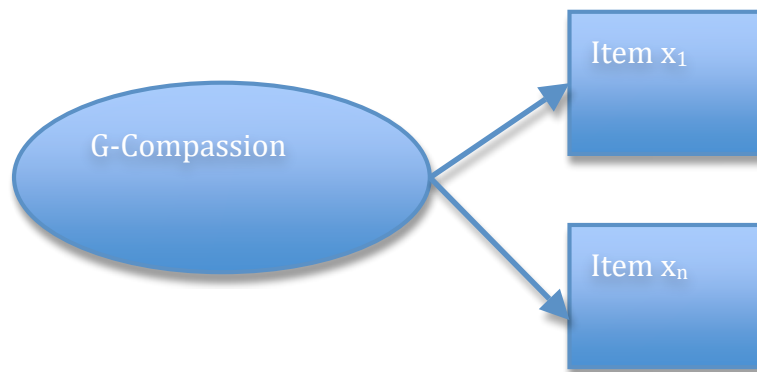


Figure 1: Diagrammatic presentation of the general compassion model (i.e. model 1).

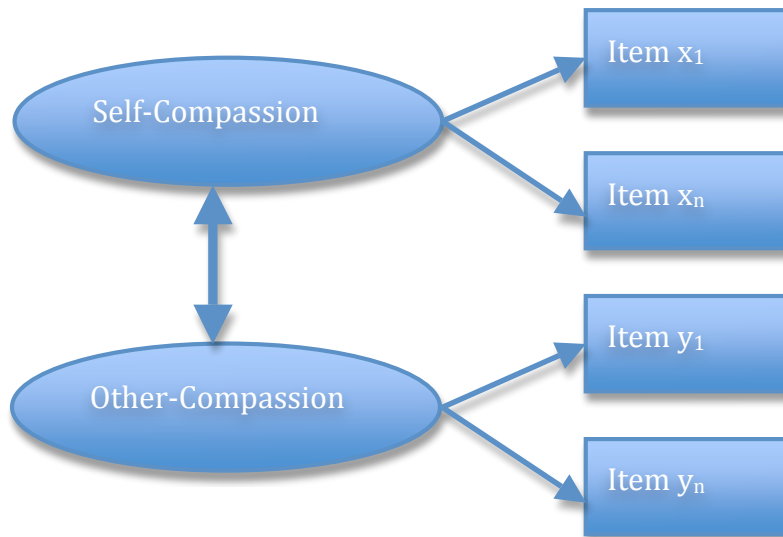


Figure 2: Diagrammatic presentation of the self-other compassion model (i.e. model 2).

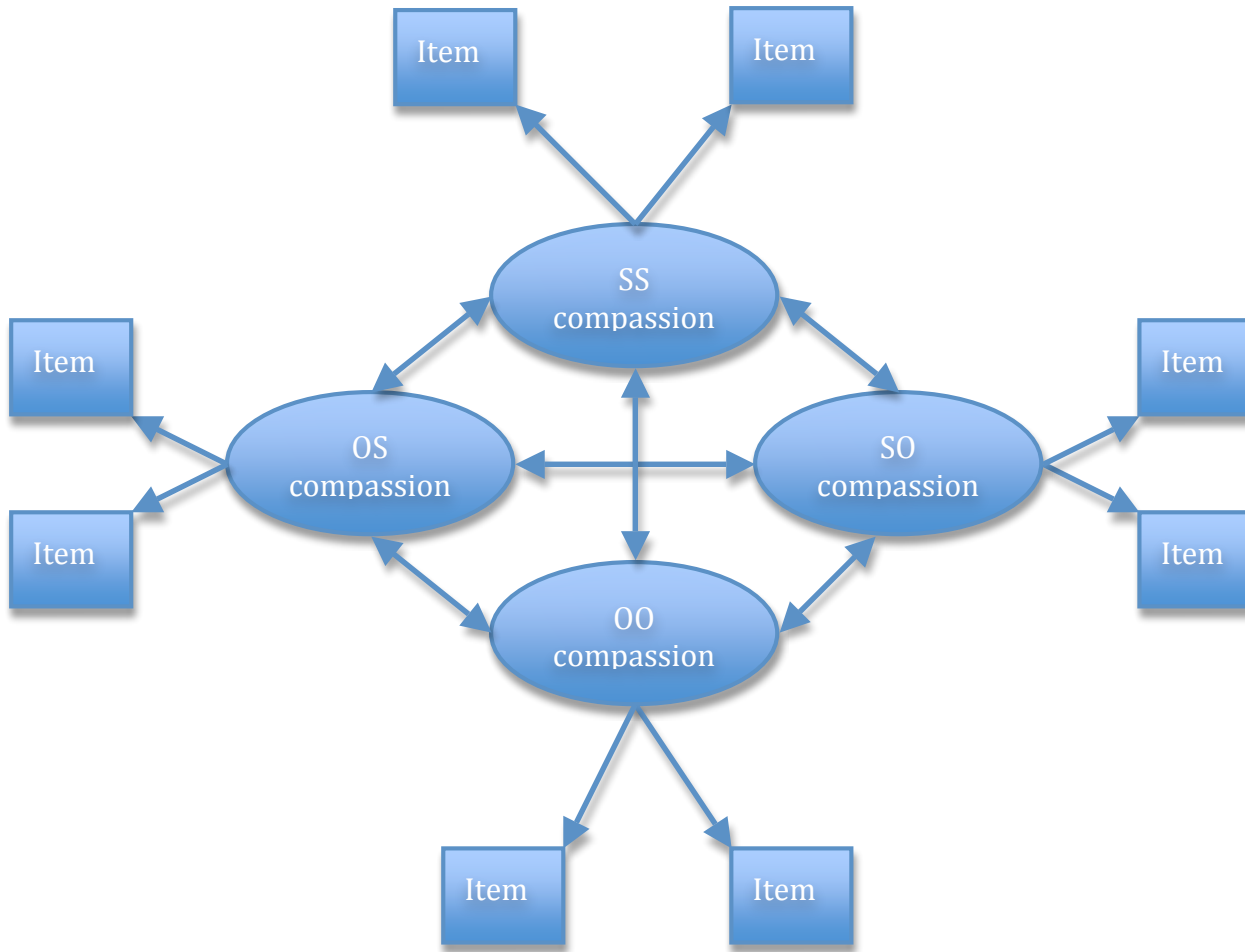


Figure 3: Diagrammatic presentation of the four-factor model (i.e. model 3). SS compassion-self to self compassion; SO compassion-self to other compassion; OS compassion-other to self compassion; OO compassion-other to other compassion.

Tables

	Online Sample
Age [M (SD)]	31.1 (11.9)
Sex [N (%)]	
Female	135 (67.2)
Male	62 (30.8)
Marital Status [N (%)]	
Single	130 (65.3)
Married	46 (22.9)
Separated	4 (2.0)
Divorced	15 (7.5)
Widowed	1 (.5)
Not reported	3 (1.5)
Occupation [N (%)]	
Management	14 (7.0)
Professional	117 (58.2)
Administration	24 (12.1)
Unemployed	19 (9.5)
Skilled trade	7 (3.5)
Unskilled trade	3 (1.5)
Not reported	15 (7.5)

Table 1: Demographic characteristic of the online sample.

	Arts Students	Engineering Students	Fisher's Exact Test (p)
Age N (%)			
16-29 years	7 (70)	14 (70)	1.00
30-44 years	3 (30)	6 (30)	
Sex [N (%)]			
Female	6 (60)	6 (30)	.139
Male	4 (40)	14 (70)	

Table 2: Demographic characteristic of the extreme group sample.

	Chi ² /df	CFI	GFI	RMSEA
Model 1	3.33	.389	.52	.11
Model 2	3.23	.417	.52	.11
Model 3	2.46	.621	.60	.08
Final Model	1.59	.95	.91	.055

Table 3: Competing models with their respective goodness-of-fit indices.

Item no.	Item Statement	Factor	Estimate
3	Other people tend to be understanding.	00	.463
4	Generally people do not try to understand others' problems.	00	.752
5	I like to listen to other peoples' stories.	S0	.615
6	When I am emotionally upset, I try to be warm, sensitive and sympathetic to myself.	SS	.784
7	I tend to become attuned to other peoples' feelings.	S0	.783
9	People generally don't tend to listen to others.	00	.795
13	Generally people dismiss other peoples' problems.	00	.737
15	I find it hard to understand other peoples' problems.	S0	.597
22	Other people I know tend to be sensitive to my wellbeing.	OS	.693
27	Other people I know are empathic when I make a mistake.	OS	.600
30	I don't know what to do when other people are distressed.	S0	.560
33	When I am emotionally upset I try to see my thoughts and feelings as valid.	SS	.573
35	When I am emotionally upset I treat myself with kindness and care.	SS	.760
36	I am interested to understand others' experiences and emotions.	S0	.659
39	Other people I know tend to show understanding and caring.	OS	.840
40	Other people I know are caring when I am distress.	OS	.874

Table 4: Standardised regression weights per items and factor.

	SS	SO	OO
SS	1		
SO	.361	1	
OO	.190	.168	1
OS	.381	.287	.450

Table 5: Factor inter-correlation.

Scale	Scale Factor	SS Compassion	SO Compassion	OS Compassion	OO Compassion
EACS^a					
	Emotional Expression	.508**	.410**	.374**	.188
	Emotional Processing	.455**	.420**	.232*	.046
SCS^b					
	Self- Compassion	.654**	.236*	.370**	.321**
SCSRS^c					
	Inadequate Self	-.293**	.026	-.392**	-.329**
	Reassured Self	.426**	.010	.393**	.433**
	Hated Self	-.406**	.118	-.292**	-.304**
RSQ^d					
	Secure	.305**	.340**	.421**	.213
	Fearful	-.216	-.230*	-.429**	-.351**
	Preoccupied	-.152	-.058	-.306**	-.232*
	Dismissing	-.049	-.153	-.056	-.134
	Anxious	-.029	-.185	-.264*	-.318**
	Avoidant	-.074	-.223*	-.253*	-.296**

Table 6: Correlation between Relational Compassion Scale factors and Emotional Approach Coping Scale (EACS), Self-Compassion Scale (SCS), Criticism/Self-Attacking and Self-Reassuring Scale (SCSRS), Relationship Styles Questionnaire (RSQ); N^a=93, N^b=83, N^c=88, N^d=82; **p<0.01,*p<0.05.

How one becomes what one is

Abstract

This account describes a critical incident that illustrates how reflective learning contributed to transform my professional and clinical perspective; a shift that not only resulted in a critical review of my practice but which I believe also helped me to work in a more responsive, creative and ultimately more effective manner.

My reflective account uses Rolfe and colleagues' guiding questions (Rolfe et al., 2001), which inherently lend themselves to exploring issues concerning the impact of an incident, resulting developmental changes and their relevance for my professional development. Throughout this discourse, I drew on theories of critical learning and reflective practice (Redmond, 2004), and transference and counter-transference (Racker, 1968).

My reflections demonstrate my increased awareness of transference and counter-transference processes and their significance for the formation and maintenance of effective working alliances. The account also illustrates how 'reflection on practice' may translate into 'reflection in practice', to borrow two of Schon's concepts (Schon, 1983). Lastly, it highlights the importance of an awareness and critical appraisal of my own presumptions and their bearing on my clinical practice.

Experience of Implementing a Novel Psychological Treatment

Intervention in an Inpatient Setting

Abstract

This reflective account describes my experience of contributing to the planning and implementation of a group intervention approach in an inpatient setting. Employing Johns' reflective model (1994) the described experience has been significant as it illustrates my commitment to working towards professional and policy guidelines (Integrated Care Pathways for Mental Health, 2007; New Ways of Working, 2007). More specifically, the account illustrates my development towards professional standards including NOS 6 (Manage the provision of psychological systems, services and resources), 5 (Develop and train the application of psychological skills, knowledge, practices and procedures) and 4 (Communicate psychological knowledge, principles, methods, needs and policy requirements). Lastly, this account has been meaningful as a personal and professional learning experience as it evidences my capacity of managing the emotional and practical consequences in the context of impasses in my work environment.

StudyID: _____
 Date: _____
 Author: _____
 Year: _____
 JrnI: _____

Appendices

Appendix 1.1

Clinical Trials Assessment Measure (CTAM)

Sample—two questions: maximum score=10

Q1: is the sample a convenience sample (score 2) or a geographic cohort (score 5), highly selective sample, e.g., volunteers (score 0); Convenience sample—e.g., clinic attenders, referred patients or Geographic cohort—all patients eligible in a particular area	—
Q2: is the sample size greater than 27 participants in each treatment group (score 5) or based on described and adequate power calculations (score 5)	—

Allocation—three questions: maximum score=16

Q3: is there true random allocation or minimisation allocation to treatment groups (if yes score 10)	—
Q4: is the process of randomisation described (score 3)	—
Q5: is the process of randomisation carried out independently from the trial research team (score 3)	—

Assessment (for the main outcome)—five questions: maximum score=32

Q6: are the assessments carried out by independent assessors and not therapists (score 10)	—
Q7: are standardised assessments used to measure symptoms in a standard way (score 6), idiosyncratic assessments of symptoms (score 3)	—
Q8: are assessments carried out blind (masked) to treatment group allocation (score 10)	—
Q9: are the methods of rater blinding adequately described (score 3)	—
Q10: is rater blinding verified (score 3)	—

Control groups—one question: maximum score=16

Q11: TAU is a control group (score 6) and/or a control group that controls for non-specific effects or other established or credible treatment (score 10)	—
---	---

Analysis—two questions: maximum score=15

Q12: the analysis is appropriate to the design and the type of outcome measure (score 5)	—
Q13: the analysis includes all those participants as randomised (sometimes referred to as an intention to treat analysis) (score 6) and an adequate investigation and handling of drop outs from assessment if the attrition rate exceeds 15% (score 4)	—

Active treatment—three questions: maximum score=11

Q14: was the treatment adequately described (score 3) and was a treatment protocol or manual used (score 3)	—
Q15: was adherence to the treatment protocol or treatment quality assessed (score 5) where the criterion is not reached for any question score 0	—

Total score: maximum score=100

Appendix 1.2

Psychosomatic Medicine -- Instructions for Authors

Psychosomatic Medicine Instructions for Authors Manuscripts for review should be submitted over the World Wide Web at <http://psymed.editorialmanager.com>. They should be addressed to the attention of David S. Sheps, M.D., Editor-in-Chief, Psychosomatic Medicine. Books for review and other correspondence should be mailed to Dr. Sheps at the University of Florida, P. O. Box 100181, Gainesville, FL 32610-0181. The editorial office telephone number is (352) 376-1611, Ext. 5300. The e-mail address is: psychosomatic@medicine.ufl.edu.

The Journal welcomes original research articles, literature reviews, and case reports. Original data manuscripts may be considered for Rapid Communication if the text including references and tables is no longer than 3,200 words and the manuscript does not require major revision. If a major revision is required, the manuscript will be processed as a regular submission. Note that this category is for succinct manuscripts of unusual interest, not for pilot data or work in progress.

Manuscripts are reviewed with the understanding that they are original, have not been published other than in an abstract form, and are not under simultaneous review elsewhere. All authors must approve of the submission, and before publication, the corresponding author should secure permission to name anyone listed under acknowledgments. Most manuscripts are sent to outside peer reviewers, but a small percentage are evaluated only in-house and may be rejected if they are not suitable for the journal or up to the journal's quality standards. Psychosomatic Medicine requests authors to adhere to the journal's statistical guidelines, available on the Web at: <http://www.psychosomaticmedicine.org/misc/stat.shtml>. The journal endorses several statements developed to improve the quality of medical research reports. Authors are encouraged to consult the CONSORT, MOOSE, and QUOROM statements, available on the World Wide Web at: <http://www.consort-statement.org>.

Electronic manuscripts should be formatted so text is double-spaced (including references and tables) on 8 1/2"x 11" paper size. When submitting a manuscript, describe in a brief cover letter the paper's objectives and significance. The editor welcomes, but is not bound by, suggestions for possible peer reviewers.

On the cover page, include the title, full names of author(s), with degrees and academic or professional affiliations, and the complete address, telephone number, fax number, and email address of the author to whom proofs and correspondence should be sent. Indicate the total number of words contained in the manuscript, and the number of tables and figures; the word count should include the body of the paper, the references and the tables. If the title exceeds 45 characters, supply an abbreviated running title of fewer than 46 spaces. A second cover page should restate the title and full names of all authors, with no degrees listed. Number pages consecutively beginning with the abstract page. Manuscripts should be no longer than 6,500 words.

Abstract: All papers should include a brief initial abstract of not more than 250 words followed by up to 6 key words for indexing. All abstracts should be submitted in outline format, using the bolded headings of Objective, Methods, Results, and Conclusions. After the keywords, list all acronyms used in text, e.g., DBP = diastolic blood pressure; BMI = body mass index.

Tables and Illustrations: Tables should be double-spaced, including all headings, and should have a descriptive title. Each table should be numbered sequentially in Arabic numerals and begin on a new page. Do not use vertical lines. When preparing tables, if appropriate to the data, include the number of subjects, the statistical tests or estimation techniques used, p values, and some measure of variability (standard deviations, standard errors or confidence intervals) for any estimates (e.g., means, differences, proportions) presented. For figures, please do not use three-dimensional graphs for two-dimensional data. When submitting the manuscript, tables and figures may be included in the same electronic file as the main body of the text or uploaded separately to the Web site.

For line artwork, submit black ink drawings of professional quality, high-contrast glossy photographs of original drawings, or laser proofs of either 300 dpi or 600 dpi (please, no screens behind graphs). A separate sheet of legends for illustrations should be included. Authors wishing to use color figures will incur a fee to defray the associated printing costs. For further graphical details, see <http://cpc.cadmus.com/da/guidelines.asp>.

References and Footnotes: In the text, citation of references is by full-sized numbers in parentheses. Footnotes to the text are indicated by Arabic numeral superscripts numbered consecutively throughout the paper and placed at the foot of each page on which they are cited. List references in the order cited in the text. Number references consecutively, using Arabic numerals. References should be typed double-spaced and placed at the end of the text beginning on a separate page. List all authors; do not use "et al." The reference list should not include personal communications or manuscripts submitted but not accepted for publication.

References should be styled as follows:

Book: Tomb DA. Psychiatry. 5th ed. Baltimore: Williams & Wilkins; 1994.

Edited Book: Gorman JR, Locke SE. Neural, endocrine, and immune interactions. In: Kaplan HI,

Sadock BJ, editors. Comprehensive textbook of psychiatry. vol 1. 5th ed. Baltimore: Williams &

Wilkins; 1989. p. 111-25.

Journals: Irvine J, Baker B, Smith J, Jandciu S, Paquette M, Cairns J, Connolly S, Roberts R,

Gent M, Dorian P. Poor adherence to placebo or amiodarone therapy predicts mortality: results

from the CAMIAT study. Psychosom Med 1999;61:566-75.

Periodical abbreviations should follow those given by Index Medicus. Correct journal abbreviations can be found by searching at: <http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=journals>

Upon acceptance of an article, authors will be asked to transfer copyright to the American Psychosomatic Society to ensure the widest possible dissemination of

information under the U.S. Copyright Law. After acceptance, manuscripts are forwarded to the publisher, and questions regarding publication, reprints, proofs, etc. should be addressed to LWW. The corresponding author receives proofs approximately 6 weeks prior to publication. Corrections should be to the publisher within 48 hours of receipt.

Reprints: Reprints may be ordered prior to publication through the publisher using the order form that accompanies proofs. Post-publication orders cannot be filled at regular reprint prices.

Appendix 2.1

List of study collaborators

Professor Andrew Gumley, Professor of Psychological Therapy, Glasgow University;

Professor Paul Gilbert, Professor of Clinical Psychology, Derby University;

Dr Ken Mullen, Medical Sociologist, Glasgow University;

Dr Jackie Smith, Clinical Psychologist, NHS Greater Glasgow & Clyde;

Dr Phil Wilson, GP, NHS Greater Glasgow & Clyde;

Dr Alistair Wilson, Psychiatrist, NHS Greater Glasgow & Clyde.

Appendix 2.2

Relational Compassion Scale

Instruction: Please read each statement carefully before answering. To the right of each item indicate with a number from 1 to 4 how much you agree with each statement using the following scale:

Disagree	Disagree	Agree	Agree				
Strongly	Somewhat	Somewhat	Strongly				
<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%; text-align: center;">1</td> <td style="width: 25%; text-align: center;">2</td> <td style="width: 25%; text-align: center;">3</td> <td style="width: 25%; text-align: center;">4</td> </tr> </table>				1	2	3	4
1	2	3	4				

1.)	People tend be forgiving of others.	___
2.)	Other people I know tend to be critical of me if I make a mistake.	___
3.)	Other people tend to be understanding.	___
4.)	Generally people do not try to understand others' problems.	___
5.)	I like to listen to other peoples' stories.	___
6.)	When I am emotionally upset, I try to be warm, sensitive and sympathetic to myself.	___
7.)	I tend to become attuned to other peoples' feelings.	___
8.)	Other people I know see being emotionally upset as a sign of weakness.	___
9.)	People generally don't tend to listen to others.	___
10.)	I think people are generally caring.	___
11.)	Other people I know tend to dismiss me when I'm distressed.	___
12.)	When I am emotionally upset I tell myself to pull myself together.	___
13.)	Generally people dismiss other peoples' problems.	___
14.)	When I am emotionally upset I get overwhelmed by my feelings.	___
15.)	I find it hard to understand other peoples' problems.	___
16.)	When I am emotionally upset I try to understand what it is that I am feeling inside.	___
17.)	People tend to blame others for their problems.	___
18.)	Other people I know tend to blame me when things go wrong.	___
19.)	People are often critical of others mistakes.	___

20.)	I can hold on to painful feelings experienced by another person.	___
21.)	I try to imagine another persons' experience by taking their perspective.	___
22.)	Other people I know tend to be sensitive to my wellbeing.	___
23.)	Other people I know tend not to understand my point of view.	___
24.)	When I am emotionally upset I tend to become critical of my thoughts and feelings.	___
25.)	When I am emotionally upset I become attuned to my feelings.	___
26.)	People are generally good at listening to other peoples' problems.	___
27.)	Other people I know are empathic when I make a mistake.	___
28.)	I tend to get overwhelmed when other people are upset.	___
29.)	Sometimes I feel other peoples' problems are too much for me.	___
30.)	I don't know what to do when other people are distressed.	___
31.)	Other people I know tend not to listen to me if I am upset.	___
32.)	I try to avoid getting involved in other peoples' problems.	___
33.)	When I am emotionally upset I try to see my thoughts and feelings as valid.	___
34.)	When I am emotionally upset I try not to think about how I am feeling.	___
35.)	When I am emotionally upset I treat myself with kindness and care.	___
36.)	I am interested to understand others' experiences and emotions.	___
37.)	People are generally interested in others feelings.	___
38.)	When I am emotionally upset I tell myself not to be stupid.	___
39.)	Other people I know tend to show understanding and caring.	___
40.)	Other people I know are caring when I am distress.	___

Appendix 2.3

Relational Compassion Scale

Instruction: Please read each statement carefully before answering. To the right of each item indicate with a number from 1 to 4 how much you agree with each statement using the following scale:

Do Not	Agree	Agree	Agree
Agree	Slightly	Moderately	Strongly
1	2	3	4
1.)	Other people tend to be understanding.		_____
2.)	Generally people do not try to understand others' problems.		_____
3.)	I like to listen to other peoples' experiences.		_____
4.)	When I am upset, I try to be warm, sensitive and sympathetic to myself.		_____
5.)	I tend to become attuned to other peoples' feelings.		_____
6.)	People generally don't tend to listen to others.		_____
7.)	Generally people dismiss other peoples' problems.		_____
8.)	I find it hard to understand other peoples' problems.		_____
9.)	Other people I know tend to be sensitive to my wellbeing.		_____
10.)	Other people I know are empathic when I make a mistake.		_____
11.)	I don't know what to do when other people are distressed.		_____
12.)	When I am emotionally upset I try to see my thoughts and feelings as valid.		_____
13.)	When I am emotionally upset I treat myself with kindness and care.		_____
14.)	I am interested to understand others' experiences and emotions.		_____
15.)	Other people I know tend to show understanding and caring.		_____
16.)	Other people I know are caring when I am distress.		_____

Relational subscales:

SS	>	4, 12, 13,
OS	>	9, 10, 15, 16
SO	>	3, 5, -8, -11,14,
OO	>	1, -2, -6, -7

Appendix 2.4

Participants Information Sheet

Title of Project: The development of a Compassion Questionnaire

Principal Researcher: Thomas Hacker, Trainee Clinical Psychologist

Date: 30/03/07

Version: 1

You are being invited 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 time to read the following information carefully and discuss it with the researcher if you wish. Ask us if there is anything that is not clear or if you would like more information. Take time to decide whether or not you wish to take part.

Thank you for reading this.

What is the purpose of the study?

The aim of this study is to develop and evaluate a Compassion questionnaire. It is intended that the questionnaire would be used by clinicians to support their judgment regarding appropriate psychological interventions. I also hope this questionnaire to be used by researcher to further explore our understanding of compassion.

Why have I been chosen?

You have been chosen to take part as we are keen to hear your views on the Compassion questionnaire as this will inform the continued development of the questionnaire.

Do I have to take part?

It is up to you to decide whether or not to take part. If you do decide to take part you will be given this information sheet to keep and be asked to sign a consent form. If you decide to take part you are still free to withdraw at any time and without giving a reason. A decision to withdraw at any time, or a decision not to take part, will not affect the standard of care you receive.

What do I have to do?

The study will involve a researcher presenting a pilot version of the questionnaire to you. Your impression of it would be evaluated, using your questionnaire responses and your feedback on an evaluation questionnaire. The results of this study will help us to identify what needs to be changed and will inform the final design and content of the questionnaire. It should take about 15 minutes of your time.

What happens when the research study stops?

We hope the resulting Compassion questionnaire to be used in a clinical context to help clinicians make better judgment about client's needs. The questionnaire will be freely available for clinicians.

Will my taking part in the study be kept confidential?

All the information collected will be kept strictly confidential and no information that would allow you to be identified will be recorded.

Will I be reimbursed for my participation?

We are not able to offer any gift or incentives for your participation as we feel this might unduly affect people's decision to partake in the study.

What will happen to the results of the study?

The results of the study will be used to help us develop the questionnaire further.

Contact for further information

If you would like to take part or require further information please contact myself on the details below.

Thomas Hacker

Trainee Clinical Psychologist

Section of Psychological Medicine

Gartnavel Royal Hospital

1055 Great Western Road

Glasgow G12 0XH

Email: thomashacker@nhs.net

All participants will be given a copy of this information sheet and a signed consent form to keep.

Appendix 2.5

Participants Consent Form

Title of Project: The development of a Compassion Questionnaire

Name of Researcher: Thomas Hacker, Trainee Clinical Psychologist

Please initial below

1. I confirm that I have read and understand the information sheet dated 30/03/07 (version 1) for the above study and have had the opportunity to ask questions. -----

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 agree to take part in the above study. -----

Name of participant Date Signature

Name of person taking consent Date Signature
(If different from researcher)

Researcher Date Signature

Note: 1 copy for participant; 1 copy for researcher; 1 copy to be kept with research notes

Appendix 2.6

Mr Thomas Hacker

Flat 2/00

27 Oakfield Avenue

Glasgow

G12 8LL

22nd February 2008

Dear Mr Hacker

Medical Faculty Ethics Committee

Project Title: Development of a 'Compassion Questionnaire'

Project No.: FM05506

The Faculty Ethics Committee has reviewed your application and has agreed that there is no objection on ethical grounds to the proposed study now that the requested revisions have been incorporated. They are happy therefore to approve the project, subject to the following conditions:

- The research should be carried out only on the sites, and/or with the groups defined in the application.
- Any proposed changes in the protocol should be submitted for reassessment, except when it is necessary to change the protocol to eliminate hazard to the subjects or where the change involves only the administrative aspects of the project. The Ethics Committee should be informed of any such changes.
- If the study does not start within three years of the date of this letter, the project should be resubmitted.
- You should submit a short end of study report to the Ethics Committee within 3 months of completion.

Yours sincerely,

Dr. Anne M McNicol

Faculty Ethics Officer

Appendix 2.7

Publishing guidelines for contributors to the British Journal of clinical psychology

Downloaded from: <http://www.bps.org.uk/publications/journals/bjcp/notes-for-contributors.cfm> on 06/08

Contributions must be typed in double spacing with wide margins. All sheets must be numbered.

Tables should be typed in double spacing, each on a separate page with a self-explanatory title. Tables should be comprehensible without reference to the text. They should be placed at the end of the manuscript with their approximate locations indicated in the text.

Figures can be included at the end of the document or attached as separate files, carefully labelled in initial capital/lower case lettering with symbols in a form consistent with text use. Unnecessary background patterns, lines and shading should be avoided. Captions should be listed on a separate page. The resolution of digital images must be at least 300 dpi.

For articles containing original scientific research, a structured abstract of up to 250 words should be included with the headings: Objectives, Design, Methods, results, Conclusions. Review articles should use these headings: Purpose, Methods, Results, Conclusions:

British Journal of Clinical Psychology - Structured Abstracts Information

For reference citations, please use APA style. Particular care should be taken to ensure that references are accurate and complete. Give all journal titles in full.

SI units must be used for all measurements, rounded off to practical values if appropriate, with the imperial equivalent in parentheses.

In normal circumstances, effect size should be incorporated.

Authors are requested to avoid the use of sexist language.

Authors are responsible for acquiring written permission to publish lengthy quotations, illustrations, etc. for which they do not own copyright.