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Wellbeing in Chronic Fatigue Syndrome: Relationship to symptoms and psychological distress

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**Key Practitioner Messages**

* Previous psychological research into CFS has largely focused on the identification of negative constructs and CBT, a treatment that targets evidenced based negative criteria, has demonstrated efficacy in reducing levels of fatigue and disability. However, the majority of people continue to experience psychiatric symptoms and excessive levels of fatigue post-treatment. Finding ways to enhance the efficacy of existing treatments is a clinical priority.
* There is evidence to suggests that in clinical populations, standard CBT is effective at reducing negative affect and thinking but fails to enhance low levels of positive affect and thinking, implying treatments may be more effective if they promote positive functioning alongside a reduction of negative functioning.
* Multidimensional models of well-being suggest that well-being is not a single phenomenon, and different psychological disorders may be characterised by varying well-being deficit profiles.
* Psychological Well-Being was found to be diminished in CFS participants compared to controls, with particularly marked deficits in Personal Growth, Environmental Mastery and Self-Acceptance, suggesting that these may be particularly important treatment targets.
* Well-being dimensions within the CFS group were largely independent of physical symptoms but strongly related to psychological symptoms, suggesting what may be causing low levels of well-being in CFS is largely psychological factors and the general impact of living with a chronic illness rather than symptom levels per se.

**Abstract**

Objective: There is growing recognition in psychology that wellness is more than the absence of disease and distress. Well-being has been defined in numerous ways. Two dominant models include Diener, Eunkook, Suh, Lucas & Smith’s (1999) model of Subjective Well-Being (SWB) and Ryff’s (1989) model of Psychological Well-Being (PWB). In contrast to the abundance of research investigating negative constructs and psychopathology in CFS, there has been a paucity of positive psychology studies. This study had two aims: To examine PWB and SWB and their relationship to symptoms in CFS and to compare PWB scores in a subgroup of the CFS sample to a matched control group.

Method: CFS Participants (N=60) completed self-report scales of PWB, SWB, fatigue, anxiety and depression. PWB scores in a subgroup of the CFS sample (N = 42) were compared to those of a matched non-clinical control group (N = 42).

Results: Correlations between scales of symptoms and well-being were complex. Well-being dimensions were largely independent of physical components of fatigue but strongly related to psychological components of fatigue and psychological distress. Multiple regression indicated that five dimensions of well-being uniquely predicted symptomatology. Compared to the control group, the CFS group scored significantly lower on five of Ryff ‘s six PWB dimensions, with particularly marked deficits in Personal Growth, Environmental Mastery and Self-Acceptance.

Conclusion: This multi-dimensional assessment of well-being advances our understanding of CFS and offers new treatment targets. Future research must investigate whether interventions targeting theses well-being deficits can boost the efficacy of symptom-focused treatments.

**Key Words:** Chronic Fatigue Syndrome, Depression, Psychological Well-Being, Subjective Well-Being, Cognitive Behavioural Therapy

In the last few decades, positive psychology research has exponentially grown, broadening attention to include more positive aspects of what makes life good, in addition to understanding distress and symptoms. This emphasis on wellness suggests the value of understanding the promotion of strengths, happiness and well-being as well as the amelioration of psychopathology, weakness and dysfunction (Seligman & Csikszentmihalyi, 2000). In accordance with this view, the World Health Organisation defines health as: “A state of complete physical, mental and social well-being and not merely the absence of disease or infirmity” (1946, p. 1). With an ageing population and increasing prevalence of chronic, disabling conditions, health care providers are being forced to expand their focus from the traditional emphasis on cure and quantity of life, to include the promotion of quality of life and well-being (The Institute of Medicine, 2012). When a return to premorbid functioning is not possible, the question of how to conceive recovery as a treatment objective is pivotal. The Recovery Model Approach endorsed by The National Institute for Mental Health England (2005) focuses on reducing the impact of chronic illness, as opposed to illness per se. This is achieved through the provision of holistic interventions that cultivate facets of well-being including self-efficacy, hope, empowerment, a positive self-image, self-management skills, social inclusion and meaning in life.

To date there is no consensus on what well-being is. The research however, can be broadly categorised according to two schools of thought (Ryan & Deci, 2001). The way we define well-being is important because it determines what research variables we measure and how we practice. Hedonic theorists suggest that a person has well-being to the extent that they feel pleasure, enjoyment and happiness in their life (Kahneman, Diener, & Schwarz, 1999). The most prolific model of hedonia is Diener, Eunkook, Suh, Lucas & Smith’s (1999) tripartite model of subjective well-being (SWB) which defines happiness as a combination of three components: A global evaluation of satisfaction with one’s life; the presence of positive affect; and the absence of negative affect. Alternatively, eudaimonic theorists concern themselves with examining what a person is doing in their life, as opposed to how it makes them feel. They propose that a person will flourish if they are striving to achieve their true potential and engaging in purposeful activities. Ryff’s (1989) model of Psychological Well-Being (PWB) hypotheses that six criteria are necessary for a person to flourish in life: Autonomy (the ability to be independent, self-determining and not look to others for approval); Self-Acceptance (having positive self-regard and acceptance of one’s strengths and weaknesses); Environmental Mastery (the ability to choose, control and create environments that fit with one’s personal needs and values); Positive Relationships with Others (the ability to form warm and trusting relationships and display empathy and intimacy towards others); Purpose in Life (having goals and a direction in life that contribute to the belief that one’s life is purposeful); Personal Growth (an openness to new experience and sense that one is growing and developing over time). In clinical psychology, Eudaimonic well-being tends to be privileged as its focus on life processes, as opposed to specific outcomes, offers clearer implications for the development of treatments (Fava & Ruini, 2003).

Chronic Fatigue Syndrome (CFS) is a debilitating, medically unexplained condition characterised by a range of symptoms including profound and disabling fatigue, sleep difficulties, pain and cognitive impairment (Fukuda et al., 1994). Recovery is rare and the majority of patients develop a chronic course of symptoms. Perhaps owing to its medically unexplained status, previous psychological research into CFS has focused largely on identifying the presence of negative factors that play a causal or maintaining role, with a particular emphasis on psychiatric disorders (Abbey, & Garfinkel, 1991; Fischler, Cluydts, De Gucht, Kaufman, & De Meirleir, 1997), maladaptive personality traits (Deary, & Chalder, 2010; Sáez-Francàs et al., 2014) and social dysfunction (Mayer, 1998; Wearden, Lamberton, Crook & Walsh, 2005). Standard CBT for CFS targets evidence based negative processes for example depression, perfectionism and fear avoidance and according to NICE (2007) is the recommended treatment. It has been shown to reduce levels of fatigue and disability. Nevertheless, at post-treatment 70% of patients still meet criteria for excessive fatigue Quarmby, Rimes, Deale, Wessely, & Chalder 2007; White, *et al* ., 2011). Recovery from psychiatric symptoms could be improved too. A systematic review (Price, Mitchell, & Hunot, 2008) examining the efficacy of CBT found that compared to treatment as usual (TAU), CBT showed an advantage at short-term follow-up but not post-treatment; whereas the reverse was seen for anxiety, with a post-treatment advantage being lost at follow up. The effect of CBT on quality of life needs further research, however, evidence from a single RCT suggests that CBT is no more effective at improving cognitive functioning or quality of life in CFS patients than standard medical care or an education and support group (O'Dowd, Gladwell, Rogers, Hollinghurst, & Gregory, 2006). Price *et al*. (2008) therefore conclude that studies investigating other interventions that can be used in conjunction with CBT to increase its efficacy, should be a major research priority.

First and second generation Cognitive Behavioural Therapies (CBT) based on behavioural learning and information processing theories can be broadly catergorised as illness or symptom-focused treatments, in that they specifically aim to reduce problematic mental processes and behaviours. Clinical investigations signify however, that the elimination of negative functioning and illness does not necessarily give rise to positive functioning and wellness. A study investigating the effects of internet-delivered CBT for major depression on future thinking found that despite being effective at reducing negative future thinking, CBT did not produce a corresponding increase in positive future thinking (Andersson, Sarkohi, Karlsson, Bjarehed, & Hesser, 2013). This is significant given that depressed individuals differ from healthy controls predominantly in their failure to anticipate positive events, as opposed to their propensity to anticipate negative events (Bjarehed, Sarkohi & Andersson, 2010). Brown (2007) examined affectivity in 606 patients undergoing CBT treatment for a variety of axis I disorders, including GAD, social phobia, panic disorder, specific phobia and obsessive compulsive disorder. Findings revealed that negative affect demonstrated a large treatment effect, whilst positive affect remained remarkably stable. Together, these studies suggest that standard CBT may not target the whole problem and provide further support for a positive psychology approach that promotes positive functioning alongside a reduction of negative functioning in CFS. The past decade has seen a rapid increase in third-wave therapies such as Acceptance and Commitment Therapy (ACT), mindfulness, and Compassion Focused Therapy (CFT) that in contrast to standard CBT have expanded their focus beyond the removal of symptoms. Collectively, they aim to help people foster various aspects of well-being (e.g. a positive self attitude and meaning in life), by accepting their difficulties and connecting with what they value. At present there has been a paucity of studies investigating the efficacy of third waves therapies in CFS. Furthermore, investigations of deficits in positive processes that may identify treatment targets for such therapies are lacking in this population.

A broad, multidimensional investigation of well-being has yet to be conducted in individuals with CFS, despite mounting evidence suggesting that this is a valuable approach in those with depression and other chronic physical health conditions. Within the well-being literature depression is the most researched disorder and there is now robust evidence to suggest that depression arises not only from “the presence of the negative”, but also from “the absence of the positive” (Ryff & Singer, 1996, p. 21). Several studies have profiled Ryff’s model of PWB in depression using clinical and non-clinical samples and findings indicate that depression correlates negatively with all six dimensions. In a comparison of clinically depressed patients to matched controls, Edmondson and Macleod (2014) found that depressed individuals were most depleted in the domains of Environmental Mastery and Self-Acceptance. Overall, PWB research highlights the need for depression treatments that focus not only on alleviating psychopathology but also on promoting well-being; in particular, rebuilding individuals’ sense of control over their environment and fostering a more positive self-attitude (Edmondson & MacLeod, 2014). Mangelli et al. (2002) examined Ryff’s psychological well-being dimensions in patients with rheumatoid arthritis. Findings revealed that well-being was largely independent of disease variables (disease activity, pain and functioning) and more closely related to psychological distress. Compared to a large American community sample (Ryff, Lee, Essex & Schmutte, 1994), patients reported significantly lower well-being scores across all six PWB dimensions and showed the most marked impairment in Personal Growth and Purpose in Life. This is a distinctly different pattern of deficits to that observed in depressed samples. Finally, Schleicher, Alonso, & Shirtcliff (2005) investigated Ryff’s model of PWB in a sample of 57 women with fibromyalgia. Findings showed psychological well-being was independent of pain but strongly related to self-reported disability. Unfortunately, psychological distress was not measured. Compared to two matched groups, one of healthy controls and the other of women with rheumatoid arthritis, the fibromyalgia group reported the lowest overall PWB and demonstrated significantly greater deficits from the healthy control group mean in Environmental Mastery, Self-Acceptance, Positive Relations with Others, Purpose in Life, and to a lesser extent Personal Growth. Due to the cross-sectional nature of these studies it is not possible to draw causal conclusions and the relationship between well-being, disability and psychological distress is most likely bidirectional. Findings do however, allude to the presence of condition-specific deficits in PWB. They also concur that increasing meaningful activity and promoting well-being should be the focus of treatments for chronic physical conditions, opposed to reducing physical symptoms per se.

The present study addressed a major gap in the literature by conducting the first theoretically informed, multi-dimensional investigation of well-being in CFS. Building such a profile helps us better understand the experiences of people with CFS and identify new treatment targets. The relationship between measures of well-being and measures of physical symptoms and psychological distress were examined in a sample of adults with CFS. No previous research has considered CFS’s relationship to Ryff’s dimensions of PWB. Secondly, it examined Ryff’s (1989) six domains of PWB in a group of CFS participants, by directly comparing their scores to that of a matched, non-clinical control group. More information is needed about the profile of well-being in individuals currently suffering from CFS so that treatments can be specifically tailored to their needs. To summarise the study had two hypotheses:

Hypothesis 1: CFS participants’ self-reported scores on both hedonic and eudaimonic aspects of wellbeing will be significantly related to their self-reported scores on measures of symptoms (the Multi-dimensional Fatigue Inventory) and psychological distress (the Hospital Anxiety and Depression Scale). Differential relationships between different aspects of well-being and different aspects of CFS were of major interest but there was no basis for making strong predictions.

Hypothesis 2: Self-reported ratings of current PWB will be significantly lower in the CFS group than the Control group. Differential impairments on the different psychological well-being scales were of significant interest; however again there was no basis for making strong predictions.

**Method**

Participants

Participants were 60 individuals with a diagnosis of CFS recruited from two outpatient CFS services (one based in London and one in Lincolnshire); UK based CFS/ ME support groups; UK based CFS online forums; direct approach to the researcher having seen the study registration. Participant demographics are presented in Table 1. The majority were female (80%) and 21.7% had a co-morbid diagnosis of fibromyalgia. The mean number of years with CFS was 8.08 (SD = 7.38) and the mean time taken to receive a diagnosis of CFS from the onset of symptoms was 3.83 years (SD = 4.39). Of the 38 participants recruited from CFS services, 23 had been assessed by the service and were on the waiting list to start treatment and 15 were currently receiving treatment. The mean number of treatment sessions received was 7.52 (SD = 4.32). Inclusion criteria were over 18 years old, living in the UK, fluent in English and either a score of 13 or greater on the general fatigue subscale of the MFI-20 or a score of 10 or greater on the reduced activity subscale, indicating severe fatigue in accordance with the Centre for Disease Control and Prevention (CDC) diagnostic criteria (Reeves *et al* ., 2005; Smets, Garssen, Bonke, & De Haes, 1995). CFS participants recruited from services were required to have a diagnosis of CFS confirmed from a physician and a clinical assessment that includes a blood test. Participants recruited outside of services were asked to confirm that a physician had given the diagnosis of CFS.

Control data were obtained from an archival pool of 50 control participants, recruited from online forums and community settings (including job centres and libraries), who completed the same well-being measures 1-3 years prior to the CFS sample (Blackburn, 2014; Edmondson, 2012). Inclusion criteria were (1) not currently experiencing or seeking treatment for any mental health difficulties; (2) aged 18-65. Control group mean scores were in the non-clinical range on the PHQ-9 (<5) (Spitzer, Kroenke, & Williams, 1999) and the GAD-7 (<5) (Spitzer, Kroenke, & Williams & Löwe, 2006). All controls completed a demographics questionnaire and the 54-item PWB scale (Ryff, 1989; Sewell, Hauser, Springer, & Hauser, 2004). Starting with CFS Participant 1 and working consecutively through the list, each CFS participant was matched to a Control participant by finding the closest age (within 5 years), gender (female vs. male), ethnicity (Caucasian vs. non-Caucasian), employment status (unemployed vs. not unemployed) and marital status (in a relationship vs. not in a relationship) match from either sample. The 12 CFS participants and eight Control participants that could not be matched were excluded from the between groups analysis, leaving a total of 42 participants in each group. An independent samples t-test and series of chi-squared test yielded no significant between group differences on any of the matched demographics.

Insert Table 1 here

*Procedure*

Ethical approval was obtained from the East of Scotland Research Ethics Committee (REC number: 14/ES/0053). Recruitment took place between June 2014 and January 2015. Clinicians in services invited patients meeting inclusion criteria to participate. Eligible patients were given a written information sheet and clinicians verbally explained the study to them. Those interested in taking part were given a consent form and questionnaire pack to take away and return by post to the researcher using a prepaid, self-addressed envelope. CFS participants from support groups were recruited by advertising the study on social media sites and emailing support groups listed on the ME Associations website. Participants were asked to email the researcher if they were interested in taking part. They were then emailed an information sheet and asked to provide a postal address so that a questionnaire pack could be sent to them.

*Measures*

Multi-dimension Fatigue Inventory MFI-20 (Smets *et al* ., 1995)

It is a widely used 20-item scale divided into five scales: General Fatigue (generalised statements about fatigue and decreased functioning), Physical Fatigue (physical sensations related to fatigue), Mental Fatigue (cognitive and concentration difficulties), Reduced Activity (the influence of fatigue on activity levels) and Reduced Motivation (lack of motivation for initiating activity). Participants rate each statement according to how they have been feeling recently, using a five-point Likert scale running from agreement with the accompanying statement "yes, that is true" to disagreement "no, that is not true". Higher scores indicate more fatigue. The MFI-20 has shown good internal consistency in a large CFS sample (Cronbach’s α = 0.91–0.79) and is used in the CDC case definition of Chronic Fatigue Syndrome to assess fatigue (Fuduka et al., 1994).

Hospital Anxiety and Depression Scale (HADS; Zigmond, & Snaith, 1983).

Anxiety and depression were measured using the HADS, a widely used measure for people with physical illnesses. A higher score indicates higher distress and a score above 7 suggests clinically significant anxiety or depression. It has established validity, internal consistency (Cronbach’s α = 0.82–0.83) and test-retest reliability (r = 0.86–0.89).

Psychological Well-Being Scale (PWB–54 item) (Ryff, 1989).

The PWB scale is a theoretically grounded instrument designed to measure Ryff’s six dimensions of PWB: Autonomy, environmental mastery, personal growth, purpose in life, positive relations with others, and self-acceptance. Participants rate each statement on a scale of 1 to 6 (1= strong disagreement; 6= strong agreement) according to how accurately they reflect their current life. On each subscale, a higher score indicates higher PWB. It has demonstrated good internal (Cronbach’s α = 0.86-0.93), and test-retest reliability (range = 0.81-0.88; Andersson, Sarkohi, Karlsson, Bjärehed, & Hesser, 2013). Convergent validity with other measures of positive functioning is good (r = 0.25-0.73) (Ryff, 1989). Reliability in the present CFS sample was .88 for the Autonomy scale, .89 for Environmental Mastery, .78 for Personal Growth, .81 for Positive Relations with Others, .86 for Purpose in Life scale and .90 for the Self-Acceptance scale.

The Scale of Positive and Negative Experience (SPANE) (Diener *et al* ., 2010)

The SPANE is a 12-item scale that has six items corresponding to positive emotions including “joyful”, “good” and six items corresponding to negative emotions including “angry”, “bad”. Participants rate how frequently they have experienced each emotion in the past four weeks using a 5-point scale (1= “very rarely or never”; 5= “very often or always”). Internal consistency is good (Cronbach’s α = 0.81-0.89), as is temporal stability (0.62-0.68) and convergent validity with other measures of emotion, well-being and life satisfaction (Diener, et al., 2010). Reliability in the present sample was .91 for the Positive Affect scale and .85 for the Negative Affect scale.

*Statistical Analyses*

A series of Pearson correlations were performed to evaluate bivariate relationships between wellbeing and symptom variables. Given the number of correlations being performed, a conservative significance value of .01 was used. A series of multiple regression analyses were conducted to establish whether well-being variables predicted symptomology in CFS participants. All correlations between well-being dimensions and symptoms found to be significant at the .01 level were included in the regression for that particular symptom. The predictive power of several demographics variables [age, number of years with CFS, relationship status (In a relationship/ not in a relationship), employment status (unemployed/ not unemployed) and stage of treatment were computed to check whether they needed to be taken into account. One significant effect was found: CFS participants currently receiving treatment were significantly more active (Mean =12.35, SD =3.601) than those recruited at the assessment stage (Mean =15.43, SD =4.315; t(44) =2.634, p =.012) and those not in services (Mean =16.00, SD =4.169; t(35) =2.819, p =.008). Treatment stage was entered as the first step in a hierarchical regression in order to partial out any contribution to Reduced Activity levels.

**Results**

*Relationships between symptoms and well-being in the CFS sample*

Differential relationships were found between symptoms and well-being variables (Table 2). Physical components of fatigue (general fatigue, physical fatigue, reduced activity) were largely independent of well-being variables, with the exception of environmental mastery, which showed a consistent negative association. Psychological components of fatigue (mental fatigue, reduced motivation) and psychological distress (anxiety and depression) showed a strong relationship to several well-being variables.

Insert Table 2 here

All regression models presented in Table 3 were significant. Treatment stage explained a significant amount of variance in Reduced Activity Levels (R2 = .143, F(1, 58) = 9.704, p =.003). Environmental Mastery entered at step 2 in the hierarchical regression contributed to an increase in variance from 14% to 30%, a change that was highly significant (F(1, 57) = 13.083, p < .001). Environmental Mastery was found to be a unique predictor of physical aspects of fatigue (physical fatigue and reduced activity). Reduced Motivation was strongly related to all aspects of well-being and uniquely predicted by Positive Relations with Others. In terms of psychological distress, a high level of Positive Affect uniquely predicted a low level of Depression and a low level of Negative Affect and to a lesser extent a high level of Autonomy, predicted a low level of Anxiety.

Insert Table 3 here

*Group differences*

Demographics for the two groups are displayed in Table 4. Scores on the PWB scales can be seen in Table 5. A Group (CFS, Control) x Dimension (Autonomy, Mastery, Growth, Positive Relations, Purpose, Self-Acceptance) mixed model ANOVA was carried out. There were significant main effects of Dimension (F(2.96, 242.86) = 183.89, p<.001) and Group (F(1,82) = 130.39, p<.001), qualified by a significant Group x Dimension interaction (F(2.96, 242.86) = 22.76, p<.001). Post-hoc Fisher’s protected t-tests indicated that CFS participants scored significantly lower than control participants on five out of six dimensions of PWB, the exception being Autonomy which did not differ.

Insert Table 4 here

Insert Table 5 here

To profile the PWB of the CFS group, a comparison was made using the Control group scores as baseline scores for each dimension of PWB. Each CFS participant’s score for a dimension was calculated as the distance from the Control group mean and divided by the Control group standard deviation, to produce a set of standardised scores. The CFS group scores shown in Figure 1 represent standard deviations from the Control group mean. A one-way ANOVA showed a significant difference between the six dimensions on the extent to which scores deviated from the control baseline (F(3.98,163) = 22.93, p < .001). Post-hoc tests showed that Personal Growth, Environmental Mastery and Self-Acceptance were significantly lower than the other three variables (all p values < .001) and did not differ significantly from each other. There were no other significant differences.

Insert Figure 1 here

**Discussion**

CFS is a poorly understood condition, with no known cure. Previous psychological research into CFS has largely focused on the identification of negative constructs, such as aversive emotional states and maladaptive appraisals, cognitions and behaviours. CBT, a treatment that targets evidenced based negative constructs, has demonstrated efficacy in reducing levels of fatigue and disability in this population. However, the majority of people continue to experience psychiatric symptoms and excessive levels of fatigue post-treatment and finding complimentary treatments targets that can be used in conjunction with existing therapies to boost their efficacy is a clinical priority (Price *et al* ., 2008). Research into other mental and physical health disorders highlights the value of promoting positive functioning alongside reducing negative functioning, signifying that a wellbeing approach could equally advance our understanding of CFS. The present study attempted to focus on reduced positive psychological functioning and the relationship it may have to symptoms in CFS. CFS participants reported significantly lower PWB than controls on five out of six dimensions, with Personal Growth, Environmental Mastery and Self-Acceptance showing the most severe deficits. This highlights the burden of CFS beyond symptoms and is consistent with research associating CFS with reduced emotional health, life satisfaction, social functioning and occupational functioning (Collin, Sterne, Hollingworth, May, & Crawley, 2012; Rakib *et al* ., 2005; Schoofs, Bambini, Ronning, Bielak & Woehl, 2004).

Correlational analyses revealed that well-being dimensions were largely independent of physical symptoms but strongly related to psychological components of fatigue (Mental Fatigue and Reduced Motivation) and psychological distress (Depression and Anxiety). Consistent with other studies of PWB in individuals with chronic conditions, what may be causing low levels of well-being in CFS is largely psychological factors and the impact of chronic illness more generally. Participants’ scores on well-being dimensions were found to predict their scores on symptom measures, with regression models containing SWB and PWB dimensions explaining a particularly large amount of variance in psychological distress (56-63%). This is the first study to demonstrate that depression and anxiety in CFS are associated not only with the presence of negative constructs such as negative beliefs about emotion (Rimes, & Chalder, 2010) and self-critical perfectionism (Luyten, *et al* ., 2011) but also the absence of the positive constructs. On this basis, researchers may wish to consider shifting the paradigm of psychological treatments for CFS away from an exclusive focus on symptom reduction, towards also including the enhancement of strength, happiness and virtue (Seligman & Csikszentmihalyi, 2000). Well-being therapy is a short-term psychotherapeutic strategy that offers one possible adjunct to CBT (Fava & Ruini, 2003). It uses techniques such as self-monitoring of moments and feelings of well-being and enhancing engagement in pleasant activities, to improve the patients’ levels of PWB across Ryff’s dimensions.

Given the profile of psychological well-being, clinical services may wish to prioritise ways of promoting Environmental Mastery, Personal Growth and Self Acceptance specifically. Difficulties in Environmental Mastery (managing everyday affairs) may be explained by the CFS’s groups varied and fluctuating symptoms. Sufferers experience unpredictable good days and bad days, a lack of understanding about the nature of their medically unexplained illness and disbelief from professionals. This may make it hard for them to create an environment that can accommodate their needs and many report feelings of helplessness and a loss of control (Anderson & Ferrans, 1997; Clarke, & James, 2003). The emergence of Environmental Mastery as a unique predictor of physical symptoms and activity levels supports the use of treatments such as pacing and graded exercise therapy, which help patients break unhelpful boom-bust cycles of activity and obtain a greater sense of stability and control over their illness. Conversely, gaining control over uncontrollable symptoms is not always possible and treatments that help patients accept their limitations may be equally important.

Ryff and Keyes (1995) define Personal Growth as being open to new experiences and having a sense of oneself as fulfilling one’s potential and developing over time. The significant deficit in this dimension in the CFS group suggests that because of their symptoms and low energy levels they may not be in a position to be able to have new experiences that are essential for growth. It could be that individuals with CFS become so focused on their illness that it is hard for them to see past it or compartmentalise it, so that they can connect with other areas of their life. As a strategy for enhancing feelings of Personal Growth several researchers recommend goal setting and attainment (Fava, & Ruini, 2003; MacLeod, 2012; Sheldon, Kasser, Smith, & Share, 2002). Acceptance and Commitment Therapy aims to help people accept their difficulties and reconnect with what they value, as a way of providing direction and meaning in life (Hayes, 2004). Patients are encouraged to set value-based goals, which if achieved, should bring a greater sense of happiness, fulfilment and growth, than treatment-based goal which tend to be short-term and symptom focused. A systematic review suggests that when compared against any comparator, ACT for chronic pain demonstrates small positive effects for pain, depression, anxiety, physical well-being and quality of life (Veehof, Oskam, Schreurs & Bohlmeijer, 2011). Together with the present study’s findings, this suggests that ACT may also benefit those with CFS.

Problems with Self-Acceptance may reflect the intense psychological challenge that adjustment to living with a chronic illness presents, whereby a person is confronted with the task of incorporating their new limitation into their sense of self and corresponding goals and beliefs. A negative discrepancy between who one currently is and who one used to be (past self), would like to be (ideal self) or ought to be (ought self) is likely to result in feelings of disappointment and dissatisfaction (Goossens, 2010). A paucity of qualitative studies have examined self-perception in CFS. Consistent with the present study, they document a disrupted sense of identity and competence (Clarke & James, 2003), low self-esteem and a powerful longing for a life lived earlier (Asbring, 2001). Both Mindfulness and Compassion Focused Therapy are designed to enhance a positive self-attitude. Preliminary evidence suggests that mindfulness is effective at improving fatigue, distress, functioning, quality of life, maladaptive illness beliefs and positive self-regard in CFS, however more rigorous research is needed (Surawy, Roberts & Silver, 1999; Stubhaug, & Kvale, 2010; Sampalli, Berlasso, Fox, & Petter, 2009; Rimes, & Wingrove, 2013). Compassion Focused Therapy is specifically pertinent to people high in self-criticism (Gilbert, 2000, 2009). Through the use of strategies such as compassionate imagery and behaviour, it helps individuals to develop an internal compassionate relationship with themselves and appreciate their efforts, as opposed to simply focusing on whether or not they achieve their goals. It has yet to be tested in CFS. However, as an adjunct to CBT it has proven to be clinically effective at reducing levels of self-criticism in a variety of clinical populations (Braehler *et al* ., 2013; Gale, Gilbert, Read, & Goss, 2014; Lucre, & Corten, 2013; Beaumont, Galpin, & Jenkins, 2012; Ashworth, Gracey, & Gilbert, 2011).

**Limitations**

There are several important limitations to this study. Given the correlational design, it is not possible to draw causal conclusions. Relationships between well-being and symptom variables are most likely bi-directional. The definition of the CFS group is also a limitation. The CFS sample contained 22 participants recruited from outside of services and so it is not possible to conclude their symptoms were not attributable to an explanatory condition. There is reason to believe that those in this group did have CFS: Participants recruited from CFS services had been medically assessed by a physician and blood tests conducted to rule out fatigue due to other causes. In line with the CDC diagnostic criteria for CFS (the most frequently applied and extensively validated diagnostic criteria; Fukuda et al., 1994), all participants reported having had persistent or re-occurring symptoms for at least 6 months and scored in the severe range on the MFI-20. If replicated in the future however, the inclusion of a full diagnostic interview may make findings more generalisable to people suffering from CFS. There was no limitation as to participants’ stage of treatment, which could affect well-being as treatment programmes aim to help participants understand and learn to cope with their condition. However, MANOVAs were computed to examine the effect of treatment stage (assessment stage vs. in treatment vs. not currently involved with a CFS service) on symptoms and well-being and results found no significant differences between groups on well-being variables and seven out of eight symptom variables (the exception was reduced activity levels and this was accounted for in the regression). Using archival data was perhaps not as ideal as recruiting a control group, but it did allow a high degree of matching of groups on demographic variables and archival data was only 1-3 years older than the CFS data. Symptoms of fatigue and pain were not measured in the control group and explainable chronic conditions were not screened for. It is therefore, not possible to confirm that control participants did not have a chronic health condition or levels of fatigue in the clinical range. Depression and anxiety are however, highly co-morbid with CFS and all controls scored in the non-clinical range on these screening measures.

**Conclusions**

Despite the study’s limitations and the need for replication and further research, the findings provide support for the theory that psychological wellness is more than the absence of illness. They advance our understanding of CFS and offer several new treatment targets that suggest third wave psychological therapies may benefit this population. Services would initially benefit from research investigating how effective current treatments are at enhancing well-being in CFS. Then studies examining the efficacy of suggested alternative treatments that have more positive content should be a priority. Used alone or in conjunction with CBT it may be that they are not only more effective at enhancing well-being but also at reducing symptoms.

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*Table 1. Characteristics of the CFS sample (N = 60)*

|  | Mean | Standard Deviation | n | % |
| --- | --- | --- | --- | --- |
| *Sociodemographics*Female Age (years) White British Married/ In a relationship Not Unemployed Completed Further Education  | 40.50   | (18.81) | 4858333542 | 8096.75558.370 |
| *Symptoms*General FatiguePhysical FatigueMental FatigueReduced ActivityReduced MotivationAnxietyDepression | 17.9816.9515.4514.3812.929.659.02 | 2.123.373.854.283.744.754.10 |  |  |
| *Well-being*AutonomyEnvironmental MasteryPersonal GrowthPositive RelationsPurpose in LifeSelf AcceptancePositive AffectNegative Affect | 37.4830.7234.4839.1836.2031.2917.7118.75 | 9.548.688.347.149.339.594.724.33 |  |  |

*Table 2. Pearson correlations between symptoms and PWB for the CFS sample (N= 60)*

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | AU | EM | PR | PG | PL | SA | PA | NA |
| *Physical Symptoms* |  |  |
| GF | -.124(p = .346) | **-.380\*\***(p = .003) | -.273\*(p = .035) | -.191(p = .144) | -.194(p = .137) | -.281\*(p = .031) | **-0.405\*\*****(p = .007)** | 0.251(p = .055) |
| PF | .023(p = .864) | **-.440\*\***(p < .001) | -.225(p = .084) | -.180(p = .168) | -.198(p = .129) | -.252(p = .052) | -0.308\*(p = .018) | 0.156(p = .237) |
| MF | -.306\*(p = .017) | **-.464\*\***(p < .001) | -.282\*(p = .029) | **-.456\*\***(p < .001) | -.314\*(p = .014) | **-.466\*\***(p < .001) | -0.279\*(p = .032) | 0.286\*(p = .028) |
| RA | -.022(p = .867) | **-.497\*\***(p < .001) | -.148(p = .259) | -.308\*(p = .017) | -.163(p = .212) | -.292\*(p = .024) | -0.317\*(p = .014) | 0.151(p = .254) |
| RM | -.260\*(p = .045) | **-.423\*\***(p = .001) | **-.464\*\***(p < .001) | **-.491\*\***(p < .001) | **-.433\*\***(p = .001) | **-.415\*\***(p = .001) | **-0.448\*\*****(p < .001)** | 0.386\*\*(p = .003) |
| *Psychological Distress* |  |  |  |  | Psychological Distress |
| Anx | **-.538\*\***(p < .001) | **-.505\*\***(p < .001) | -.180(p = .169) | -.261\*(p = .044) | -.241(p = .063) | **-.595\*\***(p < .001) | **-0.400\*\*****(p = .002)** | **0.724\*\*****(p < .001)** |
| Dep | -.317\*(p = .013) | **-.594\*\***(p < .001) | **-.363\*\***(p = .004) | **-.581\*\***(p < .001) | **-.614\*\***(p < .001) | **-.643\*\***(p < .001) | **-0.622\*\*****(p < .001)** | **0.457\*\*****(p < .001)** |
| Notes: AU = Autonomy, EM = Environmental Mastery, PR = Positive Relations with Others, PL = Purpose in Life, PG = Personal Growth, SA = Self-Acceptance, Anx = Anxiety, Dep = Depression, GF = General Fatigue, PF = Physical Fatigue, MF = Mental Fatigue, RA = Reduced Activity, RM = Reduced Motivation, PA= Positive Affect, NA= Negative Affect, \* Correlation is significant at the 0.05 level (2-tailed), \*\* Correlation is significant at the 0.01 level (2-tailed) |

*Table 3. Regression Summary*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Predictor Variable | R2 | Unique Predictor | β |
| General Fatigue | EM, PA | 0.22 | - |  |
| Physical Fatigue | EM | 0.19 | EM |  |
| Mental Fatigue | EM, PG, SA | 0.27 | - |  |
| Reduced Activity | EMTreatment stage | 0.30 | EMTreatment stage | -.420.249 |
| Reduced Motivation | EM, PR, PG, PL, SAPA, NA | 0.37 | PR | -.299 |
| Depression | EM, PR, PG, PL, SAPA, NA  | 0.56 | PA | -.351 |
| Anxiety | AU, EM, SA PA, NA | 0.63 | NAAU | .564-.217 |
| AU = Autonomy, EM = Environmental Mastery, PR = Positive Relations with Others, PL = Purpose in Life, PG = Personal Growth, SA = Self-Acceptance, PA= Positive Affect, NA= Negative Affect |

*Table 4. Participant Characteristics for the CFS and Control group*

| Demographic Variables | CFS Group(N= 42) | Control Group(N= 42) |
| --- | --- | --- |
| Gender N Female (%) | 31 (73.8%) | 29 (69.0%) |
| Age (years) Mean (SD) | 36.13 (13.11). | 34.93 (11.26) |
| Ethnicity N Caucasian (%) | 40 (95.2%) | 35 (83.3%) |
| Relationship Status N In a relationship (%) | 22 (52.4%) | 16 (38.1%) |
| Employment Status N Unemployed (%) | 16 (38.1%)  | 16 (38.1%)  |

*Table 5. Mean (sd) of the self-report scales of PWB for the CFS and Control groups and significance of difference between the groups.*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| PWB Category | CFS Mean (SD) | Control Mean (SD) | t(82) | p |
| Autonomy | 36.52 (8.86) | 39.52 (8.92) | 1.55  | .130 |
| Environmental Mastery | 30.10 (7.83) | 42.57 (6.59) | 7.90 | <.001\* |
| Positive Relations  | 38.24 (6.98) | 45.05 (8.02) | 3.29  | .002\* |
| Personal Growth | 34.52 (7.96) | 46.31 (5.79) | 7.76 | <.001\* |
| Purpose in Life | 35.95 (9.64) | 42.83 (6.60) | 3.82 | <.001\* |
| Self Acceptance | 30.16 (8.90) | 41.69 (6.92) | 6.63 | <.001\* |

\*Difference significant at the 0.01 significance level (2 tailed)

**

*Figure 1: PWB profile of the CFS group relative to the Control group baseline (where units represent standard deviations of CFS group scores from control group mean).*