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The Impact of the Unified Protocol for Emotional Disorders on Quality of Life

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Abstract

It has become increasingly clear that mental health is more than just the absence of psychopathology and that there is clinical utility in examining positive aspects of mental health. The present study examined the effects of the Unified Protocol for Transdiagnostic Treatment of Emotional Disorders on quality of life in a randomized controlled trial that included individuals with a diverse range of emotional disorders. Results indicated that the Unified Protocol produced significant increases in quality of life when examining both within-individual effect sizes and between-conditions effect sizes compared to a waitlist condition. Furthermore, results indicated that post-treatment levels of quality of life predicted levels of functional impairment independently of diagnostic severity. These results provide further evidence of the importance of examining indicators of mental health in conjunction with markers of psychopathology and provide promising evidence that the Unified Protocol may promote improved mental health in addition to treating psychopathology.

Historically, clinical investigators have attempted to treat psychopathology through understanding and reducing the contributions of negative qualities, such as problematic behaviors or thinking patterns. Recently, however, there has been increased attention given to the benefits of a complementary focus on how positive functioning impacts mental disorder. Focusing on positive functioning in the treatment of mental disorders is important for several reasons. First, there is increasing evidence that mental health is more than merely the absence of mental illness (Keyes, 2005), and that positive qualities predict mental disorders above the contribution of negative qualities (Brissette, Scheier, & Carver, 2002; Carver, Scheier & Segerstrom, 2010). For example, individuals low in positive characteristics such as self-acceptance, autonomy, purpose in life, positive relationships with others, environmental mastery, and personal growth were at doubled risk for depression, even after controlling for previous depression, neuroticism, and physical disorder (Wood & Joseph, 2010). Similarly, it has been demonstrated that the diagnostic status of flourishing mental health, which is based upon having high levels of an array of positive mental health components (e.g., life satisfaction, purpose in life), has been shown to independently predict psychological, social, and physical functioning beyond levels of mental disorder (Keyes, 2005, 2007). Recent evidence that the presence of flourishing mental health reduces the probability of all-cause mortality in American adults across a 10-year period (Keyes & Simoes, 2012) further underscores the importance of improving our understanding of how interventions may promote flourishing mental health in addition to reducing mental illness.

Another reason for incorporating positive functioning into the study of psychopathology is that positive characteristics may act as a buffer against negative life events in the

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development of mental disorders (Davis, Nolen-Hoeksema, & Larson, 1998). For example, positive beliefs about social support and personal coping ability moderate the relationship between increased negative life events and suicidality (Johnson, Gooding, Wood, & Tarrier, 2010). Furthermore, there is evidence to suggest that positive characteristics can be cultivated through intervention and can lead to symptom reduction. For example, interventions designed to increase gratitude have been shown to reduce body dissatisfaction and worry to the same degree as cognitive behavioral techniques targeting problematic thoughts (Garaghty, Wood, & Hyland, 2010). Additional research suggests that training in living in accordance with one's valued life directions, regardless of symptoms experienced, is important for mental health (Hayes, Stroshal, & Wilson, 1999). Overall, positive functioning appears critical in understanding psychopathology and should be given equal consideration as protective factor and target for intervention.

Defining Mental Health

Subjective well-being (SWB) represents one way to conceptualize positive mental health. SWB is comprised of a cognitive component judging one's overall life satisfaction and an affective component reflecting the frequency of positive and negative emotions (Diener, 1984). SWB has been associated with a wide array of positive outcomes including decreased psychopathology, better interpersonal functioning, and functional health behaviors (Diener, Suh, Lucas, & Smith, 1999; Lyubomirsky, Sheldon, & Schkade, 2005; Pressman & Cohen, 2005). SWB is associated with, but distinct from other components of flourishing mental health such as eudaimonic well-being and social well-being (Gallagher, Lopez & Preacher, 2009; Keyes, 1998; Keyes, Shmotkin, & Ryff, 2002; Ryff, 1989). Life satisfaction, or quality of life, is a key component of SWB and refers to a comparison process in which individuals assess the quality of their life on the basis of a self-determined standard (Diener, Emmons, Larson, & Griffin, 1985).

While the conceptualization of quality of life as a construct and the measures developed to assess it continue to evolve, the World Health Organization (WHO) has defined quality of life as "an individual's perception of their position in life in the context of the culture and value systems in which they live, and in relation to their goals, expectations, standards and concerns" (WHOQOL Group, 1994; Wood-Dauphinee, 1999). One of the most widely used tools for studying SWB within clinical populations is the quality of life inventory (QOLI; Frisch, Cornell, Villanueva, & Retzlaff, 1992). This approach to assessing of quality of life aims to evaluate the individual's satisfaction in the areas of life that are the most important to them, and is rooted in the belief that an assessment of an individual's quality of life contributes clinically meaningful information to our understanding and treatment of various disorders. The QOLI allows for the examination of both global evaluations of life satisfaction and ratings of satisfaction within specific life domains.

Quality of Life in Anxiety Disorder Populations and Treatment

Traditionally, quality of life assessments were used to determine how various treatments impacted disease state, disability status, and life satisfaction in patients with chronic medical illnesses. However, there is an increasing body of empirical research suggesting that patients with emotional disorders suffer significant decreases in quality of life, which is frequently associated with increased service utilization (Meltzer-Brody & Davidson, 2000). Many patients with mood and anxiety disorders report poorer quality of life than patients with chronic medical disorders (Koran, Thienemann, & Davenport, 1996; Sherbourne, Wells, & Judd, 1996; Spitzer, Kroenke, Linzer, Hahn, Williams, DeGruy et al., 1995). Even patients with subclinical symptoms of anxiety disorders demonstrate significant impairment in quality of life (Mendlowicz & Stein, 2000). In a recent meta-analysis of overall and

individual domains of quality of life (physical health, mental health, work, social, home and family) in patients with anxiety disorders, Olatunji and colleagues (2007) found robust decreases in each the above domains of quality of life, with significantly greater impairment observed in the domains of social functioning and mental health than in physical health. There was no relationship observed between specific diagnoses and overall quality of life, but patients with post-traumatic stress disorder did report significantly greater impairment than patients with panic disorder or social phobia across certain domains of quality of life (Olatunji, Cisler, & Tolin, 2007).

Regardless of comparative differences in quality of life across diagnoses, symptom severity appears to account for only a small proportion of the variance in scores on various measures of quality of life (Rapaport, Clary, Fayyad, & Endicott, 2005). While pharmacological and psychotherapeutic treatment of social anxiety disorder and panic disorder have been associated with improvements in quality of life, there is limited research exploring the effect of treatment on quality of life across other anxiety disorders (Mendlowicz & Stein, 2000; Mogotsi, Kaminer, & Stein, 2000).

The Unified Protocol and Quality of Life

The Unified Protocol for the Transdiagnostic Treatment of Emotional Disorders (UP; Barlow, Farchione, Fairholme, Ellard, Boisseau, Allen, & Ehrenreich-May, 2011) is a newly developed cognitive-behavioral intervention that may cultivate positive qualities such as life satisfaction. The UP was designed to target all anxiety and unipolar mood disorders by treating underlying factors thought to contribute to the emotional disorders, instead of addressing disorder-specific symptoms (e.g., worries, obsessions, panic attacks). The development of the UP was based on the increasing evidence of the commonalities among emotional disorders (Barlow & Allen, 2004), including the evidence of high rates of comorbidity among the mood and anxiety disorders (Brown, Campbell, Lehman, Grisham, & Mancill, 2001; Kessler, Berglund, Demler, Jin, Merikangas, & Walters, 2005) and the extensive evidence that the mood and anxiety disorders share a common set of vulnerability factors (Barlow, 2002). By emphasizing the shared features of the mood and anxiety disorders and emphasizing the role of the common, maladaptive emotion regulation strategies in the maintenance of these disorders, the UP provides a transdiagnostic framework for understanding and treating emotional disorders (Allen, McHugh, & Barlow, 2008).

The UP distills treatment procedures from existing empirically supported treatments to create a modular treatment approach that can be flexibly applied for the treatment of emotional disorders. Specifically, the UP is designed to address the tendency to experience negative emotions (i.e., neuroticism) as well as the tendency to interpret such experiences as harmful. The treatment is comprised of 8 modules targeting: 1) motivational enhancement, 2) psychoeducation regarding the function of emotions, development of 3) present-focused, non-judgmental emotional awareness and 4) cognitive flexibility, 5) attenuation of emotional and behavioral avoidance, 6) interoceptive sensitivity, and 7) situational avoidance and, finally, 8) relapse prevention.

The motivational enhancement, emotional awareness, and situational avoidance modules may be particularly suited to facilitating positive qualities such as enhanced life satisfaction. As part of the motivational enhancement module, for instance, patients are asked to establish goals of treatment beyond simply reducing their anxiety and mood symptoms. Patients are instructed to think of things they would like to achieve if psychological symptoms were not a problem; for example, a patient with social anxiety may set a goal of having more friends and describe steps to achieve this goal, such as making small talk at work or accepting

invitations to parties. The emotional awareness module helps patients cultivate non-judgmental, mindful awareness that may facilitate the development of self-compassion. In concert, the situational avoidance module encourages patients to complete exposure exercises to pursue these goals. From the start, the rationale of treatment is to cultivate an adaptive relationship with negative emotions such that patients can engage in the behaviors/activities delineated during goal-setting, even while experiencing negative emotions. Actually engaging in behaviors that are consistent with goals is an important component of developing life satisfaction. It is important to note that these components are not unique to the UP, but are nonetheless important inclusions in any comprehensive treatment that hopes to enhance positive qualities in addition to reducing negative ones. There is preliminary evidence to support the UP's efficacy in reducing symptoms (Ellard, Fairholme, Boisseau, Farchione, & Barlow, 2010; Farchione, Fairholme, Ellard, Boisseau, Thompson-Hollands, Carl, Gallagher, & Barlow, 2012); however the impact of the UP on positive aspects of mental health has not previously been examined.

Study Aims

The present study had four aims: 1) to examine the effect of the UP on quality of life, 2) to examine associations between pre and post-treatment levels of quality of life and symptoms of anxiety and depression, 3) to examine associations between within-treatment changes in quality of life and change in anxiety/depression, and 4) to examine the incremental utility of quality of life in predicting functional impairment beyond symptoms of anxiety. We hypothesized that the UP would produce a significant increase in global ratings of quality of life, that higher levels of quality of life at pre- and post-treatment would be associated with lower levels of anxiety/depression, that greater increases in quality of life during treatment would be associated with greater decreases in anxiety/depression during treatment. Finally, we hypothesized that post-treatment levels of quality of life would predict levels of functional impairment above and beyond levels of mental disorder. These questions were examined using data from a small randomized controlled trial of the UP (Farchione et al., 2012).

Method

Participants

Participants were recruited from a pool of individuals seeking treatment at a large university-based community mental health clinic. Inclusion criteria included: a principal (most interfering and severe) diagnosis of an anxiety disorder, assessed using the Anxiety Disorders Interview Schedule for *DSM-IV* – Lifetime Version (ADIS-IV-L; DiNardo, Brown, & Barlow, 1994; see description below); age 18 years or older; fluency in English; ability to attend all treatment sessions and assessments; and ability to provide informed consent. Exclusion criteria included: current *DSM-IV* diagnosis of bipolar disorder, schizophrenia, schizoaffective disorder, or organic mental disorder, clear and current suicidal risk, current substance abuse or drug dependence (with the exception of nicotine, marijuana, and caffeine).

A total of 37 patients consented to treatment and were randomized to either the immediate or delayed-treatment conditions. The immediate treatment group (n = 26) consisted of ten males and sixteen females, with a mean age of 29.38 years (SD = 9.86, range 19 – 52 years). The delayed treatment group (n = 11) included five males and six females, with a mean age of 30.64 years (SD = 9.15, range 19 – 43). The study sample was primarily Caucasian 94.6% (n = 35). As reported by Farchione et al. (2012), no group differences were observed for age or gender. Principal diagnoses included: generalized anxiety disorder (GAD; n = 7), social phobia (SOC; n = 8), obsessive-compulsive disorder (OCD; n = 8), panic disorder with or

without agoraphobia (PDA; *n* = 8), Anxiety Disorder NOS (*n* = 2), and posttraumatic stress disorder (PTSD; *n* = 1). Three participants had co-principal diagnoses (a diagnosis of equal severity): SOC and Anxiety Disorder NOS, GAD and SOC, and OCD and PDA. Overall, participants had an average of 2.16 diagnoses at pre-treatment (*SD* = 1.19; range 1 – 5 diagnoses). There were no differences between the number of diagnoses for individuals assigned to immediate treatment (*M* = 2.15; *SD* = 1.26) or waitlist (*M* = 2.18; *SD* = 1.08). Two of the three individuals with co-principal diagnoses were randomized to immediate treatment.

Measures

Diagnosis and Severity Ratings—Baseline diagnoses were assessed with the Anxiety Disorders Interview Schedule for DSM-IV-Lifetime Version (ADIS-IV-L; Di Nardo et al., 1994). This semi-structured, diagnostic clinical interview focuses on *DSM-IV* diagnoses of anxiety disorders and their accompanying mood states, somatoform disorders, and substance and alcohol use. Principal and additional diagnoses are assigned a clinical severity rating (CSR) on a scale from 0 (*no symptoms*) to 8 (*extremely severe symptoms*), with a rating of 4 or above (*definitely disturbing/disabling*) passing the clinical threshold for *DSM-IV* diagnostic criteria. This measure has demonstrated excellent to acceptable interrater reliability for the anxiety and mood disorders (Brown, Di Nardo, Lehman, & Campbell, 2001). The full ADIS-IV-L (focusing on current and lifetime diagnoses) was administered only at the original intake. An abbreviated version of the ADIS, focusing only on current symptomatology (Mini-ADIS-IV; Brown, Di Nardo, & Barlow, 1994) was administered at posttreatment and follow-up.

Quality of Life Inventory (QOLI; Frisch et al., 1992; Frisch, 1994)—The QOLI is a 32-item self-report measure of life satisfaction. It assesses 16 subdomains: health, self-esteem, goals-and-values, money, work, play, learning, creativity, helping, love, friends, children, relatives, home, neighborhood, and community. Within each domain, individuals rate the importance of that domain ("How important is PLAY to your happiness?") on a three point sale with response options ranging from 0 (*not at all important) to 2 (extremely important).* Individuals then rate their satisfaction in that area ("How satisfied are you with your PLAY?") on a 6-point Likert-type scale ranging from −3 (*Very Dissatisfied*) to 3 (*Very Satisfied*). The product of these two ratings is then calculated for each domain, resulting in a weighted satisfaction rating that can range from – 6 to 6. The QOLI has evidenced adequate internal consistency (alpha = .77 to .89) and test-retest reliability (Frisch et al., 1992), as well as construct and convergent validity (Frisch et al., 1992; 2005). A total score for life satisfaction and weighted satisfaction scores for each subdomain can be reported.

Hamilton Depression Rating Scale (HAM-D; Hamilton, 1960)—The HAM-D was used to evaluate depressive symptoms and administered by independent evaluators in accordance with the Structured Interview Guide for the Hamilton Depression Rating Scale (SIGH-D; Williams, 1988). This commonly used measure has demonstrated good levels of interrater and test-retest reliability (Williams, 1988), as well as concurrent validity with similar clinician rated and self-report measures of depression symptoms (Beck et al., 1992).

Hamilton Anxiety Rating Scale (HAM-A; Hamilton, 1959)—The HAM-A was used to assess anxiety symptoms and was administered by independent evaluators in accordance with the Structured Interview Guide for the Hamilton Anxiety (SIGH-A; Shear, Vander Bilt, & Rucci, 2001). This commonly used measure has demonstrated good levels of interrater and test-retest reliability, as well as convergent validity with similar clinician rated and self-report measures of depression symptoms (Shear et al., 2001).

Work and Social Adjustment Scale-Clinician Rated (WSAS; Marks, Connolly, & Hallam, 1973; Mundt, Marks, Shear, & Greist, 2002)—The WSAS is a five-item clinician rated scale used to assess functional impairment and interference in five domains: work, home management, private leisure, social leisure, and family relationships. The WSAS has demonstrated good internal consistency, test-retest reliability, and convergent validity, as well as sensitivity to change and usefulness as an outcome measure (Mundt et al., 2002).

Procedure

Data were derived from a randomized controlled trial comparing the UP to a wait-list control/delayed-treatment condition (see Farchione et al., 2012; for additional details regarding study procedures). Participants randomly assigned to the immediate treatment condition were assessed at pre- and post-treatment. Wait-list/delayed treatment participants were assessed at the beginning and end of the sixteen week wait-list, the latter serving as their baseline assessment for within-treatment comparisons, as well as at post-treatment. Treatment consisted of a maximum of eighteen, 60-minute individual treatment sessions. Therapists for the study were three doctoral students with 2 to 4 years of experience and one licensed doctoral-level psychologist with seven years of experience. All therapists underwent extensive training and certification prior to treating study patients and treatment adherence was monitored during weekly supervision meetings. All clinician-rated outcome measures (i.e., ADIS; HAM-A; HAM-D; WSAS) were conducted by independent evaluators who were blind to treatment condition.

Results

The Effects of the Unified Protocol on Quality of Life

We began by examining pre-treatment levels of quality of life to determine whether there were any baseline differences between individuals randomized to immediate treatment (n = 26) or waitlist (n = 11). Descriptive statistics and effect sizes (*Hedges' g*) for the pre-treatment between-condition comparisons are presented in Table 1. Based on the confidence intervals of the effect sizes in Table 1, there were no significant pre-treatment differences in overall quality of life between individuals assigned to the immediate treatment or waitlist conditions. We next examined the effect of the UP on quality of life by comparing post-treatment levels of quality of life for those randomized to immediate treatment (n = 26) with post-waitlist levels of quality of life for those randomized to waitlist (n = 11). Descriptive statistics and effect sizes (*Hedges' g*) for the between-condition comparisons are presented in Table 2. Individuals in the UP treatment condition reported significantly higher overall levels of quality of life (M = 2.22, SD = 1.52) at post treatment compared to individuals in the waitlist (M = .93, SD = 1.96). The magnitude of the between-condition effect size for overall quality of life was large (g = .77). Furthermore, individuals in the UP condition reported higher levels than individuals in the waitlist condition at post-treatment on all but 2 (health and learning) of the 16 domains of the QOLI. The majority of the effect sizes for the 16 domains indicated that the UP had a moderate effect (i.e., *Hedges g* > .5) compared to the waitlist condition. The largest effect was found for the self-esteem domain of the QOLI (*Hedges g* = 1.03). These results indicate that individuals treated with the UP report significantly greater quality of life when compared to individuals in a waitlist comparison condition.

We next examined the within-treatment (pre-post) effects of the UP on quality of life. These analyses were conducted using the treatment initiator sample (n = 35), which includes the 26 individuals who were initially allocated to the UP and the 9 individuals who initiated the UP treatment after first completing the waitlist condition (2 individuals did not initiate treatment

after completing the waitlist). Descriptive statistics and effect sizes (Standardized Mean Gain, *ESsg*) for the within-treatment analyses are presented in Table 3. As expected, individuals reported significantly higher overall levels of quality of life at post-treatment (*M* = 1.94, *SD* = 1.53) than at pre-treatment (*M* = 1.11, *SD* = 1.95). The magnitude of the within-treatment effect size for overall quality of life was large (*ESsg* = .68). An examination of the effect sizes for the domains of the QOLI reveals that individuals reported increases on all but 2 (money and neighborhood) of the 16 domains of the QOLI. Similar to the between-condition analyses, the largest effect was found for the self-esteem domain of the QOLI (*ESsg* = 1.04). Together, these results indicate that individuals treated with the UP report significant intraindividual increases in quality of life.

Associations between Quality of Life and Anxiety/Depression

The associations between pre and post-treatment levels of quality of life, diagnosis severity (ADIS CSR), anxiety (HAM-A), depression (HAM-D), and functional impairment (WSAS) were examined next. Correlations between these variables in the treatment initiator sample are presented in Table 4. As expected, individuals who reported higher levels of quality of life at pre and post-treatment were rated by independent evaluators as having significantly less anxiety, depression, and functional impairment, as well as lower levels of severity for their principal diagnosis. The magnitude of the correlations at pre-post between quality of life and the indicators of psychopathology were all large (*r*'s ranged from −.463 to −.767). These results support our hypothesis that there is a strong relationship between indicators of mental health and psychopathology.

Associations between changes in Quality of Life and Changes in Anxiety/Depression

We next examined the degree to which intraindividual changes in quality of life from pre-posttreatment were associated with intraindividual changes in anxiety (HAM-A), depression (HAM-D), and functional impairment (WSAS). Difference scores between pre and post-treatment levels of quality of life, anxiety, depression, and functional impairment were calculated as an indicator of intraindividual change and the associations between these difference scores were then examined. There were large and statistically significant associations between intraindividual changes in quality of life and intraindividual changes in anxiety ($r = -.519$, $p = .006$), depression ($r = -.606$, $p = .001$), and functional impairment ($r = -.520$, $p = .005$). These results indicate that individuals who experienced greater improvements in quality of life during treatment also experienced greater reductions in their symptoms of anxiety and depression and their functional impairment related to these symptoms.

Independent Effects of Quality of Life and Anxiety/Depression on Functional Impairment

Our final analyses used OLS regression to examine whether post-treatment levels of quality of life and principal diagnosis severity (ADIS CSR) independently contributed to the prediction of functional impairment. Consistent with our hypotheses, results indicated that both post-treatment quality of life and diagnostic severity had significant effects on functional impairment. Individuals with greater post-treatment diagnostic severity for their principal diagnosis reported higher levels of functional impairment (*B* = 2.39, *SE* = .45, 95% CI *B* 1.47 : 3.31). Individuals with greater post-treatment quality of life reported lower levels of functional impairment (*B* = −1.54, *SE* = .47, 95% CI *B* −.58 : −2.50). An examination of the standardized effects indicates that diagnostic severity had a larger effect (β = .62) on functional impairment than did quality of life (β = −.38). Together these variables accounted for a very large proportion of the variance in clinician rated functional impairment ($R^2 = .72$). These results indicate that quality of life is an important predictor of functional impairment above and beyond levels of psychopathology, and provide additional evidence

of the benefits of examining indicators of both mental health and psychopathology in order to obtain a better understanding of psychological functioning.

Discussion

This study examined the effects of UP treatment on quality of life as well as the relationships between quality of life, anxious and depressive symptomatology, and functional impairment during treatment. Results of the study indicated that patients receiving UP treatment experienced significant improvements in quality of life. Furthermore, compared with a waitlist control group, the UP treatment group exhibited significantly higher levels of quality of life at post-treatment/post-waitlist. Moderate inverse correlations were found between quality of life and measures of anxious and depressive symptomatology and functional impairment, suggesting that although higher quality of life is associated with lower levels of symptomatology, quality of life represents more than merely the absence of clinical symptoms. Increases in quality of life occurring over the course of treatment with UP were associated with improvement in symptoms and functioning. In addition, quality of life exhibited incremental utility over diagnostic severity in predicting functional impairment at post-treatment. These findings support a conceptualization of quality of life as an important positive indicator of mental health that may account for unique variability in symptomatology and functional impairment beyond that captured by clinical indicators, such as diagnostic severity.

Despite evidence that anxiety and depression are associated with substantial decrements in quality of life (e.g., Barrera & Norton, 2009; Olatunji et al., 2011; Watson, Swan, & Nathan, 2011), few studies have investigated the effects of cognitive-behavioral treatment for anxiety and depressive disorders on quality of life (exceptions include: Rufer, Albrecht, Schmidt, Zaum, Schnyder, Hand, & Mueller-Pfeiffer, 2010; Watanabe, Furukawa, Chen, Kinoshita, Nakano, Ogawa, et al., 2010), perhaps due to implicit assumptions that reductions in mental illness inherently produce improvements in mental health. The present findings that UP treatment produces significant improvements on a broad-based measure of quality of life for patients with anxiety and unipolar depressive disorders is, therefore, an important, albeit preliminary, finding. Such increases in quality of life may engender a range of benefits, including enhanced treatment outcomes, long-term resilience, and decreased utilization of health care resources. At the same time, the broadness of a construct like quality of life presents a challenge for investigators attempting to understand the potential for specific therapeutic strategies to target dimensions of quality of life. In the present study, “self-esteem” was the quality of life domain that demonstrated the most robust changes during treatment. Based on conceptualizations of the motivational enhancement, emotional awareness, and situational exposure modules of the UP as fostering development of positive personal resources, such as self-esteem and self-efficacy, we have hypothesized that these therapeutic strategies may exert specific effects on quality of life. However, these and other hypotheses identifying specific cognitive-behavioral mechanisms for increasing dimensions of quality of life remain to be empirically evaluated.

The present findings provide support for the notion that quality of life is independent from mental disorder, and that quality of life should be conceptualized not only as a distinct mental health outcome, but also as an important *predictor* of psychiatric outcomes (Keyes, 2007). The moderate correlations found in the present study between quality of life and symptoms of anxiety and depression suggest that quality of life is associated with, and yet also, distinct from symptom severity. These results suggest that quality of life merits additional attention in treatment research; however little empirical attention has been given to quality of life or other indicators of well-being as predictors or potential agents of therapeutic change (e.g., Rufer et al., 2010; Watanabe et al., 2010; Watson et al., 2011).

The present study adds to the literature by exploring the role of quality of life as a predictor of symptoms and functioning, and the analyses suggest that change in quality of life significantly predicts change in symptoms and functioning. To the extent that quality of life can drive changes in symptomatology and functioning, dimensions of quality of life represent new therapeutic targets. Our finding that quality of life predicted post-treatment levels of functional impairment even after controlling for diagnostic severity is further indication that the construct of quality of life offers incremental utility in understanding the processes of psychopathology and recovery in anxiety disorders. However, the absence of repeated assessments during treatment of both quality of life and indicators of anxiety and depression prevented the examination of the causal links between changes in well-being and changes in psychopathology during treatment as we were unable to demonstrate the temporal precedence of change in these constructs. Future studies employing repeated assessments within treatment and cross-lag statistical methodologies would permit a more sophisticated examination of the dynamic relationships between quality of life, symptomatology and functional impairment. The use of these methods would improve our understanding of whether changes in well-being during treatment are a cause, correlate, or consequence of changes in anxiety or depression during treatment.

The primary limitation of the present study is the relatively small sample size, which limited our ability to compare levels of quality of life between diagnostic categories. The use of a waitlist comparison condition is also a limitation as we are not able to determine whether the increases in quality of life patients reported after completing the UP are different than what would be found in other cognitive-behavioral treatments. The use of a waitlist comparison condition also prevents us from determining whether the increases in quality of life may simply reflect the benefits of increased contact with a clinician. An additional limitation is that the present study focused exclusively on quality of life as an indicator of mental health. Although the QOLI assesses life satisfaction across multiple life domains, it will be important for future research to more comprehensively examine indicators of positive mental health given that life satisfaction is just one component of current theories of well-being (Gallagher et al., 2009; Keyes, 2005). Despite these limitations, the present study provides promising evidence that the Unified Protocol may promote mental health as well as effectively treat a variety of emotional disorders. The UP is intended to target transdiagnostic processes that are relevant to a range of emotional disorders and the present study suggests that positive aspects of mental health may represent an additional transdiagnostic treatment target that is important for promoting recovery from anxiety and depression.

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Table 1

Pre-Treatment Between Condition Descriptive Statistics and Effect Sizes (Hedges g)

	Unified Protocol			Waitlist			Between Condition Effect Size	
	N	**Mean**	***SD***	***N***	**Mean**	***SD***	***Hedges g***	**95% CI**
QOLI Total Score	26	1.17	1.98	11	0.66	1.77	0.26	−0.45 : 0.97
QOLI Health	26	1.00	3.73	11	2.91	2.12	−0.56	−1.27 : 0.16
QOLI Self-esteem	26	−1.50	3.55	11	−0.82	4.31	−0.18	−0.88 : 0.53
QOLI Goals and Values	26	1.50	4.12	11	1.00	3.79	0.12	−0.58 : 0.83
QOLI Money	26	0.31	2.71	11	−1.73	2.61	0.74	0.02 : 1.47
QOLI Work	26	0.62	4.04	11	0.73	3.10	−0.03	−0.73 : 0.68
QOLI Play	26	0.73	3.69	11	−1.09	3.94	0.47	−0.24 : 1.19
QOLI Learning	26	1.08	3.44	11	0.91	2.77	0.05	−0.65 : 0.76
QOLI Creativity	26	0.77	2.96	11	0.55	3.64	0.07	−0.64 : 0.77
QOLI Helping	26	1.35	2.67	11	0.55	3.50	0.27	−0.44 : 0.97
QOLI Love	26	0.81	4.47	11	−0.36	4.54	0.26	−0.45 : 0.96
QOLI Friends	26	2.69	3.15	11	1.00	3.97	0.49	−0.23 : 1.20
QOLI Children	26	1.38	3.02	11	1.18	1.47	0.07	−0.63 : 0.78
QOLI Relatives	26	2.42	3.24	11	1.55	3.78	0.25	−0.45 : 0.96
QOLI Home	26	1.23	3.43	11	−0.55	3.67	0.50	−0.22 : 1.21
QOLI Neighborhood	26	2.50	2.32	11	2.00	1.73	0.23	−0.48 : 0.93
QOLI Community	26	1.65	2.08	11	2.91	2.02	−0.60	−1.31 : 0.12

Note. QOLI = Quality of Life Inventory.

Table 2

Post-Treatment Between Condition Descriptive Statistics and Effect Sizes (Hedges g)

	Unified Protocol			Waitlist			Between Condition Effect Size	
	N	Mean	*SD*	*N*	Mean	*SD*	*Hedges g*	95% CI
QOLI Total Score	22	2.22	1.52	9	0.93	1.95	0.77	−0.03 : 1.56
QOLI Health	22	2.68	3.00	10	2.70	2.75	−0.01	−0.75 : 0.74
QOLI Self-esteem	22	2.32	2.71	10	−1.30	4.72	1.03	0.24 : 1.81
QOLI Goals and Values	22	2.91	2.94	10	1.70	3.59	0.37	−0.38 : 1.13
QOLI Money	22	0.27	2.81	10	−1.50	3.21	0.59	−0.17 : 1.35
QOLI Work	22	0.50	3.76	10	−1.00	2.94	0.41	−0.34 : 1.17
QOLI Play	22	2.36	2.87	10	0.10	4.07	0.67	−0.09 : 1.44
QOLI Learning	22	1.95	2.57	10	2.00	2.94	−0.02	−0.76 : 0.73
QOLI Creativity	22	2.18	2.67	10	0.70	2.95	0.52	−0.23 : 1.28
QOLI Helping	22	2.05	2.90	10	0.50	2.37	0.55	−0.21 : 1.31
QOLI Love	22	2.27	4.20	9	−0.78	4.58	0.69	−0.10 : 1.48
QOLI Friends	22	3.86	2.59	9	2.56	4.13	0.41	−0.37 : 1.19
QOLI Children	22	2.41	2.86	9	0.78	1.79	0.61	−0.18 : 1.40
QOLI Relatives	22	3.00	2.16	10	0.90	3.51	0.78	0.00 : 1.55
QOLI Home	22	2.14	2.80	10	0.20	2.90	0.67	−0.10 : 1.43
QOLI Neighborhood	22	2.36	1.97	10	2.10	1.85	0.13	−0.62 : 0.88
QOLI Community	22	1.77	2.60	10	1.50	2.42	0.10	−0.64 : 0.85

Note. QOLI = Quality of Life Inventory

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Table 3

Within Treatment Descriptive Statistics and Effect Sizes (Standardized Mean Gain)

	Pre			Post			Pre-Post Effect Size	
	N	**Mean**	**SD**	**N**	**Mean**	**SD**	***ESsg***	**95% CI**
QOLI Total Score	35	1.11	1.95	28	1.94	1.53	0.68	0.40 : 0.97
QOLI Health	36	1.47	3.53	29	3.00	2.71	0.43	0.06 : 0.80
QOLI Self-esteem	36	−1.44	3.84	29	2.03	3.17	1.04	0.59 : 1.49
QOLI Goals and Values	36	1.56	3.93	29	2.69	2.95	0.36	0.04 : 0.67
QOLI Money	36	−0.19	2.93	29	−0.14	3.01	−0.04	−0.35 : 0.28
QOLI Work	36	0.17	3.80	29	0.38	3.67	0.15	−0.06 : 0.36
QOLI Play	36	0.56	3.75	29	2.00	3.04	0.65	0.26 : 1.04
QOLI Learning	36	1.33	3.30	29	2.03	2.46	0.36	0.05 : 0.66
QOLI Creativity	36	0.75	2.91	29	1.93	2.62	0.50	0.13 : 0.87
QOLI Helping	36	1.11	2.58	29	1.90	2.68	0.32	0.07 : 0.58
QOLI Love	35	0.40	4.49	29	1.83	4.44	0.44	0.09 : 0.78
QOLI Friends	35	2.66	3.36	29	3.79	2.37	0.46	0.09 : 0.84
QOLI Children	35	1.23	2.74	29	2.00	2.69	0.31	0.04 : 0.58
QOLI Relatives	36	2.00	3.34	29	2.55	2.84	0.13	−0.15 : 0.41
QOLI Home	36	0.94	3.29	29	1.90	2.61	0.43	0.06 : 0.81
QOLI Neighborhood	36	2.39	2.18	29	2.28	1.85	−0.02	−0.42 : 0.38
QOLI Community	36	1.61	2.14	29	1.97	2.38	0.17	−0.21 : 0.54

Note. QOLI = Quality of Life Inventory

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Table 4

Correlation between Quality of Life and Psychopathology Outcomes at Pre and Post-Treatment in Treatment Initiator Sample (n=35)

	1	2	3	4	5	6	7	8	9	10
1. Pre Quality of Life	1									
2. Post Quality of Life	.825***	1								
3. Pre Principal Diagnosis ADIS CSR	−.588***	−.736***	1							
4. Post Principal Diagnosis ADIS CSR	−.231	−.468*	.411*	1						
5. Pre Functional Impairment- WSAS	−.463**	−.386*	.616***	.266	1					
6. Post Functional Impairment- WSAS	−.415*	−.668***	.617***	.808***	.418*	1				
7. Pre Hamilton-Anxiety	−.500**	−.353	.491**	.016	.399*	.103	1			
8. Post Hamilton-Anxiety	−.445*	−.690***	.434*	.660***	.277	.779***	.138	1		
9. Pre Hamilton-Depression	−.614***	−.469*	.545***	.035	.461**	.181	.880***	.280	1	
10. Post Hamilton-Depression	−.493**	−.767***	.457*	.638***	.247	.756***	.169	.908***	.305	1

*** Correlation is significant at the 0.001 level (2-tailed).

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

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