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Research report

Improvement in self-reported quality of life with cognitive therapy for recurrent major depressive disorder

Manish Kumar Jha [a,*], Abu Minhajuddin [e], Michael E. Thase [b,c,d], Robin B. Jarrett [a,**]

[a] Department of Psychiatry, The University of Texas Southwestern Medical Center, 5323 Harry Hines Boulevard, Dallas, TX 75390-9149, USA
[b] The Perelman School of Medicine of the University of Pennsylvania, USA
[c] Philadelphia Veterans Affairs Medical Center, USA
[d] University of Pittsburgh Medical Center, USA
[e] Department of Clinical Sciences, The University of Texas Southwestern Medical Center, USA

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ABSTRACT

Background: Major depressive disorder (MDD) is common, often recurrent and/or chronic. Theoretically, assessing quality of life (QoL) in addition to the current practice of assessing depressive symptoms has the potential to offer a more comprehensive evaluation of the effects of treatment interventions and course of illness.

Methods: Before and after acute-phase cognitive therapy (CT), 492 patients from Continuation Phase Cognitive Therapy Relapse Prevention trial (Jarrett et al., 2013; Jarrett and Thase, 2010) completed the Quality of Life Enjoyment and Satisfaction Questionnaire (Q-LES-Q), Inventory of Depressive Symptomatology Self-report (IDS-SR) and Beck Depression Inventory (BDI); clinicians completed Hamilton Rating Scale for Depression-17-items. Repeated measures analysis of variance evaluated the improvement in QoL before/after CT and measured the effect sizes. Change analyses to assess clinical significance (Hageman and Arrindell, 1999) were conducted.

Results: At the end of acute-phase CT, a repeated measure analysis of variance produced a statistically significant increase in Q-LES-Q scores with effect sizes of 0.48–1.3%; 76.9–91.4% patients reported clinically significant improvement. Yet, only 11–38.2% QoL scores normalized. An analysis of covariance showed that change in depression severity (covariates=IDS-SR, BDI) completely accounted for the improvement in Q-LES-Q scores.

Limitations: There were only two time points of observation; clinically significant change analyses lacked matched normal controls; and generalizability is constrained by sampling characteristics.

Conclusions: Quality of life improves significantly in patients with recurrent MDD after CT; however, this improvement is completely accounted for by change in depression severity. Normalization of QoL in all patients may require targeted, additional, and/or longer treatment.

1. Introduction

Major depressive disorder (MDD) is often a chronic and/or recurrent illness (Holma et al., 2008; Judd, 2001; Keller et al., 1992, 1984; Patten et al., 2010) that affects 5–7% of adults in United States annually (Hasin et al., 2005; Kessler et al., 2003). Psychosocial impairments almost always accompany depression (Judd et al., 2008; Miller et al., 1998) and worsen with increased depression severity (Judd et al., 2000). Moreover, psychosocial dysfunction may persist after treatment and increases the risk of future relapse or recurrence (Kennedy et al., 2007; Solomon et al., 2004; Vittengl et al., 2007, 2009). Hence, it is not adequate to rely solely on relief of depressive symptoms as primary outcome of treatment (Greer et al., 2010).

The World Health Organization's (WHO) definition of health as "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity" (http://www.who.int/about/definition/en/print.html) offers a more comprehensive definition of health which could be embraced by and also improve current practice in mental health. Quality of life (QoL), a measure of well-being, has gained recent attention in treatment of depression (Bech, 2005; Frisch et al., 2005; Grant et al., 1995; Ishak et al., 2011; Kilnkman, 2009; Papakostas et al., 2004; Frisch, 2009).

Quality of life can be assessed using a variety of instruments such as Quality of Life in Depression Scale (Mckenna and Hunt, 1992; Tuynman-Qua et al., 1997), Quality of Well-Being Scale (Kaplan et al., 1998), Quality of Life Enjoyment and Satisfaction Questionnaire

* Corresponding author. Tel.: +1 214 451 8206.
** Corresponding author. Tel.: +1 214 648 5343; fax: +1 214 648 5340.
E-mail addresses: manishjha2201@yahoo.com (M.K. Jha), Robin.Jarrett@UTSouthwestern.edu (R.B. Jarrett).

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(Endicott et al., 1993), Quality of Life Inventory (Frisch et al., 2005) and WHO Quality of Life Assessment Instruments (Skevington et al., 2004; Skevington and Wright, 2001). Here we used the Quality of Life Enjoyment and Satisfaction Questionnaire (Q-LES-Q; (Endicott et al., 1993), a frequently used QoL measure, that evaluates patients' enjoyment and satisfaction with different aspects of their lives through its eight summary scales of physical health, subjective feelings, work, household duties, school/course work, leisure time activities, social relationships and general activities (Endicott et al., 1993). Consistent with the definition of health by WHO, the multidimensional nature of Q-LES-Q (Bishop et al., 1999) can comprehensively capture a patient's subjective evaluation of well-being and satisfaction with life. The General activities summary scale of Q-LES-Q is often used as a short form instrument (Q-LES-Q SF) (Stevanovic, 2011).

Lower scores on Q-LES-Q are associated with increased depressive symptom severity (Endicott et al., 1993), lifetime history of MDD even in absence of any current psychiatric illnesses (Schechter et al., 2007), being unemployed, having high school education or more and being divorced or separated (Daly EJ et al., 2010). In a like manner, Q-LES-Q scores increase with both pharmacological (Demyttenaere et al., 2008; Keitner et al., 2009; Kocsis, 1997; Lydiard et al., 1997; Miller et al., 1998; Shelton RC et al., 2006; Trivedi et al., 2004a; Versiani et al., 2005) and psychosocial (Drymalski and Washburn, 2011; Swan et al., 2009) treatment interventions.

While statistically significant change in QoL has been demonstrated above, it is also important to evaluate how clinically important such changes are. Toward this end to evaluate the clinical significance of this increase in Q-LES-Q score, Swan et al. (2009) used the two-fold criteria proposed by Jacobson and Truax (Jacobson and Truax, 1991) and Cohen's *d* effect size. As a measure of clinical significance, Jacobson and Truax (1991) proposed a two-fold criterion of post-treatment score being more than cut off score (CS) and reliable change index (RCI) >1.96 to determine the extent to which a treatment intervention moves a patient out of dysfunctional range or within functional range and beyond the range of measurement error (Jacobson et al., 1984). Hageman and Arrindell (1999) proposed further refinements to RCI and CS by distinguishing individual versus group level analyses and correcting for 'regression to mean' of observed scores and labeled individual level analyses as RC_{indv} and CS_{indv} and proposed group level analyses for $proportion_{CHANGED}$ and $proportion_{BEYOND\ CUTOFF}$.

Increases in Q-LES-Q scores with treatment interventions are related to improvement in depressive symptoms but may not be completely accounted for by it. Endicott et al. (1993) estimated correlation coefficients of change in Q-LES-Q with change in Hamilton Rating Scale for Depression17-items (HRSD-17) which ranged from -0.34 to -0.54 suggesting Q-LES-Q is sensitive to change in depressive symptom but may not be totally redundant. Using hierarchical multiple regression analysis, Swan et al. (2009) reported that between 37% and 53% variance in Q-LES-Q SF is not accounted for by the change in depression severity measured by Beck Depression Inventory (BDI) II. Defining "normal" quality of life as within 10% of community norm of Q-LES-Q SF score of 58 (Rapaport et al., 2005), Demyttenaere et al. (2008) found that 40% individuals who attained remission of depressive symptoms {defined as Montgomery Asberg Depression Rating Score (Montgomery and Asberg, 1979) less than or equal to 12} did not have a "normal" quality of life.

Cognitive therapy (CT) is a commonly used and extensively researched treatment for MDD. Compared to discontinued pharmacotherapy, CT significantly reduces the risk of relapse/recurrence of MDD (Vittengl et al., 2007). Only a limited number of studies have evaluated effect of CT on QoL (Jarrett et al., 2013; Swan et al., 2009; Vittengl et al., 2007; Watson and Nathan, 2008), although the findings of these studies suggest that QoL in depressed patients improves with effective treatment. For a detailed quality of life assessment, Jarrett and Thase used long form of Q-LES-Q in Continuation Phase Cognitive Therapy Relapse Prevention (C-CT-RP) and included acute phase CT provided to adults presenting with recurrent MDD (Jarrett et al., 2013; Jarrett and Thase, 2010). As far as we know this is the first study to use the long form of Q-LES-Q to assess the outcomes of people with recurrent major depressive disorder.

In the current report, we attempt to replicate and extend previous findings by asking the following: (1) After treatment, is quality of life better than before in adult outpatients exposed to individual cognitive therapy (CT) for recurrent MDD? (2) To what extent is pre-post CT improvement in quality of life *clinically significant*? and (3) To what extent does pre-post CT change in depression severity account for the improvement in quality of life?

Previous studies used only the general activities summary scale from the Q-LES-Q to evaluate the effect of CT on QoL. Here we provide a comprehensive and multidimensional evaluation of QoL (Jarrett et al., 2013; Jarrett and Thase, 2010) by relying on a large sample ($N=492$) who completed the long form of Q-LES-Q complete with summary scales (i.e., physical health, subjective feelings, work, household duties, school/course work, leisure time activities, social relationships and general activities). We also rely upon the use of multiple measures of depression severity making replication of previously published reports possible (Endicott et al., 1993; Swan et al., 2009) in a general attempt to better understand of the influence of change in depression severity on change in QoL in recurrent MDD patients.

2. Methods

Details of the C-CT-RP trial, focused on relapse/recurrence prevention, have been described elsewhere by Jarrett et al. (2013), Jarrett and Thase (2010) (clinicaltrials.gov identifiers NCT00118404, NCT00183664, and NCT00218764). Out of the 523 patients who met inclusion and exclusion criteria and consented for treatment in C-CT-RP, 492 filled long form of Q-LES-Q prior to starting acute-phase CT and hence constituted the modified intention to treat (mITT) sample for the current report. During acute-phase CT, patients received 16–20 individual sessions spread over 12 weeks with up to 2 additional weeks to accommodate scheduling needs. Sixteen therapists provided acute-phase CT and demonstrated competence by achieving and maintaining Cognitive Therapy Scale (CTS) scores ≥ 40.

2.1. Patients

The C-CT-RP trial was approved by Institutional Review Boards at The University of Texas Southwestern Medical Center and University of Pittsburgh, Western Psychiatric Institute and Clinic. With their verbal consent, potential participants were screened over the phone and/or in-person by the clinic staff and scheduled for initial diagnostic evaluation and a second, confirmatory interview to determine eligibility. Patients included in C-CT-RP provided written informed consent, scored 14 or more on HRSD-17 at both initial diagnostic evaluation and confirmatory interview and were diagnosed with recurrent Major Depressive disorder using Structured Clinical Interview for DSM-IV with either (a) remission between episodes; (b) one prior episode with complete inter-episode recovery; or (c) antecedent dysthymic disorder. Patients were excluded if they: (a) had concurrent severe or poorly controlled medical disorder or required medications that may cause depression; (b) had concurrent bipolar disorder, any psychotic or organic mental disorder, active alcohol or drug dependence, primary (i.e. associated with most impairment)