Measuring Motivation: Change Talk and Counter-Change Talk in Cognitive Behavioral Therapy for Generalized Anxiety

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Abstract

How clients talk about change early in treatment has been found to be a potent predictor of their subsequent treatment success. Studies examining such client motivational language (arguments for and against change) have typically been conducted in the context of motivational interviewing for addictions. The present study examined the capacity of client motivational language to predict treatment outcomes in the context of cognitive behavioral therapy (CBT) for generalized anxiety. Client early in-session statements against change (counter-change talk) were found to be robust predictors of post-treatment worry scores and differentiated treatment responders from nonresponders. Moreover, client motivational language predicted outcomes beyond initial symptom severity and self-report measures of motivation. These results strongly support the relevance of client motivational language outcomes in CBT and provide a foundation for advancing research on motivation for change in a CBT context.

Client motivation for change is widely regarded as central to outcomes in cognitive behavioral therapy (CBT; Antony, Ledley, & Heimberg, 2005; Arkowitz, Westra, Miller, & Rollnick, 2008; Drieschner, Lammers, & van der Staak, 2004). However, developing adequate measures of this critical construct in the domain of anxiety and related problems has proved elusive. Although multiple self-report measures of motivation have been developed, they are often weakly or inconsistently predictive of treatment outcomes. Some investigators have reported small but significant relationships between self-reported motivation and CBT outcomes for anxiety (e.g., de Haan et al., 1997; Keijsers, Hoogduin, & Schaap, 1994a; 1994b) while others have found no relationship (e.g., Dozois, Westra, Collins, Fung, & Garry, 2004; Kampman, Keijsers, Hoogduin, & Hendriks, 2008; Vogel, Hansen, Stiles, & Götestam, 2006). Self-report measures of motivation may also be prone to social desirability bias, leading to ceiling effects on these measures (Miller & Johnson, 2008; Westra, 2012).

As an alternative to self-report, the Motivational Interviewing Skill Code (MISC), version 1.1 is an observational coding system that categorizes and quantifies client change language during therapy sessions (Glynn & Moyers, 2009). While the original MISC was intended as a treatment integrity measure for motivational interviewing (MI: Miller & Rollnick, 2002)

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and consequently quantifies both therapist and client statements, the MISC 1.1 is focused on client motivational language only. The MISC 1.1 codes client statements that argue for change as change-talk (CT) and client statements arguing against change as counter-change talk (CCT). For example, client expressions in therapy sessions of desire, ability, reasons, need, and commitment to change are considered CT, while arguments against change are reflective of CCT[1].

Most studies using the MISC have been conducted in the context of substance abuse treatment. Also, since the MISC was originally developed to measure processes in MI, most studies have focused on observations of MI sessions. CT and CCT have generally been analyzed as global constructs (i.e., as statements in favour of, or opposed to, change) or as subcategories (i.e., desire, ability, reasons, need, commitment, activation, and taking steps to change or not change) and measured in terms of frequency or averaged strength of statements. Although categorization and measurement may differ among studies, research assessing client motivational language in the context of motivational enhancement treatments has been consistent in finding that both higher levels of CT and lower levels of CCT during these early sessions are associated with more positive alcohol use outcomes following treatment (Amrhein, Miller, Yahne, Palmer, & Fulcher, 2003; Campbell, Adamson, & Carter, 2010; Magill, Apodaca, Barnett, & Monti, 2010; Moyers, Martin, Houck, Christopher, & Tonigan, 2009; Vader, Walters, Prabhu, Houck, & Field, 2010).

A study by Moyers et al. (2007) was one of the only investigations to examine client motivational statements beyond a motivational treatment context. They examined the first therapy session of three different types of treatment (motivational enhancement therapy, CBT, and twelve-step facilitation) for problematic drinking. Considering all treatments as a group, they found that CT and CCT substantially predicted outcomes up to 15 months post-treatment. CT and CCT predicted between 19% and 34% of the variance in drinking outcomes. Moyers et al. also reported that CT and CCT were independent predictors of outcome, rather than being at opposite ends of a continuum. In addition, studies have found client language regarding change to predict outcomes beyond self-report measures of motivation (e.g., Magill et al., 2010; Moyers et al.). Such findings are important in demonstrating that client motivational statements are not redundant with self-reported measures of motivation.

No research to date has specifically explored the predictive capacity of client in-session language within a CBT for anxiety treatment context. Such research is particularly needed given the lack of adequate measures of motivation for change in the anxiety domain, which has relied primarily on self-report. Given the strong and consistent findings of client motivational language as a predictor of treatment outcomes in MI for addictions, exploring the utility of this measure in the context of CBT for anxiety seems indicated. Thus, the present study applied the MISC 1.1 to a population of generalized anxiety disorder (GAD) clients receiving CBT, and examined its ability to predict post-treatment worry outcomes. It was expected that higher levels of CT and lower levels of CCT would be associated with lower post-treatment worry scores, and would differentiate treatment responders from nonresponders using criteria for gaging the clinical significance of worry outcomes. Moreover, CT and CCT were expected to predict these outcomes beyond initial symptom severity and client self-reported motivation.

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[1]It should be noted that recently Miller and Rollnick (2012) have referred to CCT as Sustain Talk instead of Counter-Change Talk.

Method

Data for the present study were derived from a larger randomized controlled trial investigating the efficacy of adding a MI pre-treatment, compared to no pre-treatment (4-week waiting period), prior to CBT for GAD (Westra, Arkowitz, & Dozois, 2009). For the evaluation of the predictive capacity of client motivational language, the CBT alone group (no pre-treatment; $N = 37$) was used to avoid any influence of having received MI on these measures.

Participants and Selection

Participants were recruited from community advertisements in the greater Toronto area. All participants had a principal diagnosis of GAD based on the administration of the Anxiety Disorders Interview Schedule for DSM-IV (ADIS-IV: Brown, DiNardo, & Barlow, 1994). Clients were not engaged in any concurrent psychotherapy, not on benzodiazepine medication, and if they were concurrently using an antidepressant, they were required to be on a stable dose at study entry (i.e., for the past 2 months) and to remain on that dose throughout the study.

Measures

Change Questionnaire (CQ: Miller & Johnson, 2008)—The CQ is a recently developed 12 item measure derived from psycholinguistic research on natural language used by clients to describe their own motivation (Amrhein et al., 2003). First, the respondent identifies what they are considering changing (in the present study this was completed for all participants as 'to worry less') and items are completed with reference to that change. Two items each represent desire, ability, reasons, need, commitment to change, as well as taking steps to change and are rated on a 0 (definitely not) to 10 (definitely) scale according to the degree that each statement describes their motivation (e.g., I want to worry less, I could worry less, etc.). Total scores range from 0 to 120 with higher scores indicating higher levels of change-talk or motivation. The CQ has good internal consistency and test-retest reliability (Miller & Johnson, 2008).

The Client Motivation for Therapy Scale (CMOTS: Pelletier, Tuson, & Haddad, 1997)—The CMOTS is a 24-item measure of client motivation for therapy based on the self-determination theory of Deci and Ryan (1985) which postulates six different types of motivation falling on a continuum of autonomy. In ascending order from least to most intrinsic sources of motivation, they are: amotivation, external regulation, introjected regulation, identified regulation, integrated regulation, and intrinsic motivation. The CMOTS yields subscale scores for each type of motivation, with higher scores reflecting higher levels of each type of motivation. After initial scale development, Pelletier et al. (1997) gave the CMOTS to 140 clients receiving therapy from different therapists in the community. They found that the scale had good internal consistency, conformed to the theoretically-derived factor structure and possessed good convergent and discriminant validity. Zuroff et al. (2007) reported that higher scores on the CMOTS were associated with increased rates of short- and long-term improvement in three different types of psychotherapy for depression. Following Pelletier et al. (1997), two subscale scores were calculated reflecting more self-determined motivation (average of identified, integrated and intrinsic motivation) and less self-determined motivation (average of amotivation, external and introjected regulation).

Penn State Worry Questionnaire (PSWQ: Meyer, Miller, Metzger, & Borkovec, 1990)—The PSWQ, a widely used 16-item instrument assessing trait worry, was employed as the principal outcome measure. The PSWQ possesses high internal consistency and

temporal stability, as well as good convergent and discriminant validity (Brown, Antony, & Barlow, 1992; Meyer et al., 1990). It also differentiates individuals with GAD from those with other anxiety disorders (Brown et al., 1992). Total scores range from 16–80 with higher scores indicating greater worry.

Observer Rated Measure: Client Motivational Statements—The MISC 1.1 (Glynn & Moyers, 2009) is an amended version of the MISC 1.0 (Miller, 2000) and focuses specifically on quantifying the frequency of client CT and CCT statements articulated during therapy sessions. Originally, the MISC was created to examine the quality of MI but has been used for a variety of different objectives including predicting treatment outcomes from in-session client language. A target behaviour must be determined as client speech is categorized as movement toward or away from this target. Change talk (CT) is client language in which a client is endorsing or expressing agreement with change, arguing for change, or moving towards change. Counter-change talk (CCT) is client language that reflects arguments against change, objection to change, or movement away from change. The MISC has been found to have strong predictive validity in the area of substance abuse (e.g., Campbell et al., 2010; Magill et al., 2010; Moyers et al., 2009; Vader et al., 2010). As just one example, Amrhein et al., (2003) found that the strength of client early commitment language was associated with greater drug abstinence attained one-year post treatment.

CBT Treatment

Treatment followed the manual developed by Borkovec and colleagues (Borkovec & Costello, 1993; Borkovec & Mathews, 1988; Borkovec et al., 2002) which focuses on the core features of GAD: chronic hyperarousal, uncontrollable worry, and inhibited emotional reprocessing secondary to worry. Treatment consisted of training in self-monitoring, applied relaxation, cognitive therapy, behavioral approach tasks, and exposure to worry and worry cues. Therapy sessions consisted of six weekly 2-hour sessions, followed by two 1-hour sessions, for a total of 14 hours of CBT. There were four CBT therapists (two female, two male) consisting of one PhD psychologist, and two senior and one junior clinical psychology graduate students. Clients were randomly assigned to therapists. Therapists received a minimum of 30 hours of training and weekly group supervision by two highly experienced CBT therapists.

Procedure

Coding procedures for client motivational language followed guidelines in the MISC 1.1 coding manual (Glynn & Moyers, 2009). In contrast to the area of substance abuse where a single, consistent target behaviour can be identified (e.g., drinking), target behaviors in anxiety treatment are typically highly variable and can include multiple interrelated targets (worry, self-criticism, rumination, perfectionism, safety behaviors such as checking or reassurance seeking). Thus, in using the MISC 1.1 in an anxiety treatment context, multiple anxiety-related target behaviors were allowed and identified as they appeared in the sessions. The target behavior that the client was seeking to change was identified and then statements that expressed either CT (movement toward the target behavior change) or CCT (movement away from the target behavior change or maintenance of status quo behavior) were coded. For example, a client statement such as "I have to stop worrying because it interferes with my sleep" or "Thinking about everything that could happen is too exhausting", would be coded as CT. In contrast, statements such as "Worrying about things motivates me to keep things organized and makes me feel productive" or "Striving for perfection makes sure I am motivated and don't become careless", would be coded as CCT. Only the global constructs of CT and CCT were coded, not particular types of CT or CCT (e.g. reasons, desire etc.). To control for client differences in verbosity, the frequency of CT and CCT were each divided by the total number of client utterances in the session. Here,

CCT was found to be significantly skewed and this was corrected by a square root transformation, which normalized this variable.

The team of coders consisted of three bachelors- and one masters-level psychology students who were trained over a period of several months. Training involved reviewing, coding, testing, and discussing samples of videotaped publicly-available CBT for anxiety therapy sessions in weekly meetings until adequate reliability (75% match) on test materials was obtained. Coders were blind to client outcome and coded sessions independently. Inter-rater reliability was calculated by double-coding a 20% random selection of audiotaped sessions. The average unweighted kappa coefficients for CCT was .60 (range.60 to .61) and for CT was .70 (range .65 to .77), which reflects fair to good agreement (Fleiss, 1981). Coders continued to attend weekly meetings for the duration of the study to resolve discrepancies and avoid coder drift.

Client motivational statements (CT and CCT) were coded for the entire first or second session of CBT (depending on recording availability; 29 first session & 8 second session). The two self-report measures of motivation (CQ and CMOTS) were administered prior to CBT. The PSWQ was administered pre- and post-CBT. Further details on the treatments and training can be obtained from the published outcome report of the larger clinical trial (Westra et al., 2009).

Results

Client demographics and means and standard deviations for all measures are presented in Table 1. The sample was between the ages of 18 and 66, not engaged in concurrent psychotherapy, ethnically diverse, generally well-educated, had a chronic worry problem, and 63% had at least one other clinically significant diagnosis beyond GAD.

In terms of intercorrelations among measures, CT and CCT were significantly positively correlated ($r = .44$, $p = .007$). CT was not significantly correlated with self-reported motivation (range of $r = -.04$ to .20). CCT was also not significantly correlated with self-report measures of motivation (range of r = −.24 to .13).

Predicting Worry Reduction

Hierarchical regression was also used to predict post-treatment worry. Here, pre-CBT PSWQ scores were entered in block 1, with scores on self-report measures of motivation entered in block 2. Again, to investigate the ability of early client in-session motivational language to predict outcomes beyond these variables, CT and CCT were entered in block 3.

Self-reported motivation measures accounted for 22% of the variance in post-treatment worry, with higher scores on the CQ being the only significant predictor of lower post-treatment worry and at a marginal level of significance ($t = 2.37$, $p = .010$). CT and CCT accounted for an additional 17% of the treatment outcome variance. Here, higher levels of CCT were significantly associated with higher post-treatment worry ($t = 2.82$, $p = .008$), and CT was found to be unrelated to post-treatment outcome ($t = 0.65$, $p = .519$). To estimate the amount of variance accounted for by CCT alone, the same regression was conducted with only CCT entered in block 3. Here, CCT was found to account for 21% of the variance in post-treatment worry scores (t=3.29, p=.003), beyond self-report measures[2].

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[2]No gender or age differences were observed in any of the results of this study.

Using CT and CCT to Differentiate Clinical Significance of Treatment Response

Recovery status post-treatment was evaluated using Jacobson and Truax (1991) criteria. Reliable change and clinical cut-off scores were determined for the PSWQ. In order to be considered a responder, a participant had to exhibit reliable change, with post-CBT scores in the normal range. A partial responder was someone who showed reliable change but did not fall within normal limits post-treatment, and a nonresponder showed no reliable change.

T-tests were conducted on CT and CCT between responders (N=26) and those who did not meet criteria for treatment response (i.e., partial responders and nonresponders, N=11). Here, those who did not respond to treatment had significantly higher levels of CCT compared to responders (M nonresponders = 0.10, SD=0.05, M responders = 0.06, SD = 0.04; t (35) = 2.19, p=.035), with a large between group effect size of d=.96 (95% confidence interval 0.20 to 1.68). No significant differences between responders and nonresponders were found for CT (M nonresponders = 0.13, SD=0.04, M responders = 0.14, SD = 0.07; t (35) = 0.44, p=.666).

Discussion

The results of the present study provide strong preliminary support for the capacity of early in-session client motivational language to predict treatment outcomes in CBT for anxiety. Client motivational statements in early CBT treatment sessions were strong predictors of treatment outcomes. In particular, a greater number of arguments against change (CCT) predicted post-treatment worry and strongly differentiated those who achieved recovery status from those who failed to meet criteria for clinical response to treatment. Moreover, client motivational statements predicted substantial additional variance (17%) in worry outcomes beyond self-report measures of motivation.

Findings from the present study highlight the relevance of incorporating observational measures of motivation in CBT. Results from this study suggest that the MISC 1.1 captures and measures an important facet of motivation. These results are consistent with previous research from the addictions domain that demonstrated that client motivational language, captured early in treatment, is consistently predictive of outcomes (Miller, Benefield, & Tonigan, 1993; Vader et al., 2010). For example, Moyers et al. (2007) analyzed client statements from the first session of therapy and found that lower levels of CCT predicted a higher percentage of drinking days abstinent and that both lower levels of CCT and higher levels of CT predicted fewer drinks per drinking day. Baer et al. (2008) found that CCT, although expressed infrequently, was a strong predictor of negative treatment outcome for homeless youth substance users.

Of the few studies that have examined client language using the MISC within a CBT context, Aharonovich, Amrhein, Bisaga, Nunes, and Hasin (2008) found that increases in strength of commitment language during the second or third CBT session predicted treatment retention and drug use. Despite the variation in the categorization and measurement of CT and CCT, the results of the present study, combined with those of previous research, provide evidence for a predictive relationship between observed in-session client language and outcome. The findings of the present study suggest that the utility of client language as a predictor of outcomes can be extended to treatments beyond MI, as proposed by Moyers et al. (2007) and to populations outside of addictions.

Self-report measures of motivation in this study were also significant predictors, collectively accounting for 22% of the variance in worry outcomes. The CQ self-report measure fared particularly well, with higher scores on this measure being associated with lower post-treatment worry and greater subsequent homework compliance (although the homework

compliance effects were only marginally significant). These findings are somewhat incongruent with other studies examining various self-report motivation measures which generally find weak and inconsistent relationships with outcomes (Field, Adinoff, Harris, Ball, & Carroll, 2009; Kampman et al., 2008; Pinto, Pinto, Neziroglu, & Yaryura-Tobias, 2007; Sutton, 2001). Thus, if future research can replicate these findings, it suggests that the CQ may be a more promising self-report measure of motivation. Interestingly, the CQ is based on psycholinguistic motivational language research and translates client language reflecting desire, ability, reasons, need, and commitment to change into a self-report format. Thus, it might be possible that client motivational language may also be measured in paper-pencil format, and further underscores the importance of client language when assessing motivation.

The findings of the present study also suggest that observational and self-report measures of motivation were not redundant instruments, as each type of measure contributed significantly to the prediction of outcome. Thus, these measures may be capturing different facets of motivation. Furthermore, collectively CT, CCT and the self-report measures accounted for a substantial 40% of the variance in treatment outcome. These findings support the widely held belief of the centrality of client motivation for change to outcomes in CBT (e.g., Antony et al., 2005; Arkowitz et al., 2008; Westra, 2012).

Interestingly however, client in-session language and self-report measures of motivation were not significantly correlated. While this seems somewhat surprising, it may be that in-session client language is a more specific facet of motivation. That is in-session language may be more accurately described as specifically capturing ambivalence regarding change, while self-report measures of motivation are often variously and much more broadly defined to attempt to capture multiple facets of motivation (e.g., willingness, optimism, expectancy, action toward change, etc.). Moreover, as noted, self-report measures of motivation are severely limited by response bias, variable definitions of motivation, and ceiling effects; leading to lack of clarity about what is being measured.

In the present study, arguments against change (CCT) were a more consistent and potent predictor of outcomes than arguments in favour of change (CT). These results are consistent with conclusions of others (e.g., Moyers et al., 2007) that CT and CCT seem to be separate constructs, rather than being endpoints on the same continuum. This possibility was further supported by the positive (rather than negative) correlation between CT and CCT (i.e., higher levels of CT were not associated with lower levels of CCT). If replicated, the findings of the present study may suggest that different contexts and populations (i.e., CBT for anxiety) may have different aspects of client language that are more sensitive to and predictive of treatment outcomes.

One reason why CCT may be a more potent predictor of outcomes than CT may relate to the context in which these statements are measured. That is, by necessity, the observation of client language occurs within an early therapy session. Here, clients may be interested in `putting their best foot forward` with respect to articulations of interest in change, while minimizing their expressions of CCT. In fact, CCT occurred at half the rate of CT in this study (7% vs 14% of all client utterances). For example, a person presenting for smoking cessation is unlikely to start off the treatment conversation by stating all the reasons to continue smoking. That is, presentation for treatment may `pull for` articulations of the need and desire for treatment and problem eradication. Also, in order to maintain consistency between one`s attitudes and the behavior of presenting for treatment, clients may be more likely to articulate reasons for change, while minimizing arguments for not changing. This is consistent with other research finding that clients have difficulty articulating concerns, reservations, or doubts about treatment (Rennie, 1994; Rhodes, Hill, Thompson, & Elliott,

1994). If this is true, then CCT may be a relatively more potent predictor of outcomes given the interpersonal and contextual demands against articulating these concerns, rendering such articulations more rare but potentially more `valid` reflections of a person's true ambivalence regarding therapy and change.

Limitations and implications

Although results from the current study are promising there are several limitations. The sample size was small and future research should attempt to replicate and extend the present study findings using larger samples. Moreover, samples should also include other anxiety populations beyond GAD and other treatment contexts beyond CBT. This work would be very valuable in evaluating whether, as indicated in the present study, the relevance of client language can be extended to other clinical contexts.

Although client motivation is regarded as a critical to treatment engagement and outcomes, the lack of robust measures of motivation has impeded research (Blanchard, Morgenstern, Morgan, Labouvie, & Bux, 2003). To the extent that the MISC 1.1 is a valuable and potent measure of motivation, it has the potential to advance research on how client motivation impacts the process of treatment and ultimately, treatment outcomes. For example, future research incorporating observational coding of early client motivational statements could be examined in relation to other markers of engagement or disengagement in therapy including homework compliance, therapeutic alliance, alliance ruptures, interpersonal processes between clients and therapists, among others, since each of these variables are considered important to the outcome of therapy (Keijsers, Kampam, & Hoogduin, 2001; Safran & Muran, 1996; Westra, Constantino, & Aviram, 2011). Moreover, the present study focused on investigating the early phase of treatment; however, future research investigating CT and CCT across the course of therapy could examine patterns of client language and its relationship to positive and negative outcomes. Lastly, the therapist's role in eliciting CT or CCT influences outcome (Moyers et al., 2009) and could also be studied and further elucidated in the context of CBT.

In terms of clinical implications, the findings of the present study suggest that client language can provide crucial moment-to-moment indications of motivational level. Specifically, study findings stress the importance for clinicians to recognize and manage client statements reflecting CCT (or ambivalence). This is particularly indicated when considering that client CCT statements constituted only 7% of all client statements, on average. This suggests that even though they are relatively rare, client arguments against change can represent key moments in a therapy session.

Learning to identify such statements may provide opportunities for clinicians to enhance motivation and possibly treatment outcome. For example, within the context of MI, CCT or ambivalence about change is explored and viewed as a normal and expected process of motivation to change (Miller & Rollnick, 2002). Research suggests that CCT is amplified when clinicians employ a directive or confrontational approach which then leads to increased resistance to change (e.g., Beutler et al., 2011; Miller & Rollnick, 2002; Patterson & Forgatch, 1985). Hence, CBT therapists who are able to identify CCT and adopt a supportive therapy approach as needed may be able to improve treatment outcome. Moreover, utilizing both sensitivity to client in-session language regarding change and self-report measures can assist clinicians in creating optimal treatment strategies.

To our knowledge, this is the first study to evaluate client motivational statements within a CBT for anxiety context. The findings of this study strongly support the inclusion of observation of client in-session language regarding change as a potent predictor of outcomes in CBT for anxiety. Developing a sensitivity to how clients talk about change early in

treatment may be useful clinically in adjusting intervention styles. Moreover, inclusion of such observational measures in future research on CBT and other treatments for anxiety and related conditions, may have the capacity to further our understanding of a key variable in psychotherapy, client motivation for change.

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Table 1

Sample Characteristic

Measure	CBT (*N* = 37)
Penn State Worry Questionnaire	
Baseline	*M* = 65.95, *SD* = 9.02
Post-CBT	*M* = 42.39, *SD* = 15.61
1-year post-CBT	*M* = 43.22, *SD* = 16.64
Change Questionnaire	*M* = 103.41, *SD* = 10.61
Client Motivation for Therapy Scale	
Less self-determined	*M* = 10.45, *SD* = 4.40
More self-determined	*M* = 22.37, *SD* = 2.93
Change-talk	*M* = 0.14, *SD* = 0.06
Counter-change-talk	*M* = 0.07, *SD* = 0.05
Gender	27 female, 10 male
Age	*M* = 41.05, *SD* = 11.85
Ethnicity	22 Caucasian
	8 Asian
	4 Hispanic
	3 African Canadian
Marital status	18 Married/cohabitating
	14 Never Married
	5 Divorced/Widowed/Separated
Employment status	8 unemployed/not in school
	29 employed/in school
Highest level of education	3 elementary
	10 high school
	21 post-secondary
	3 graduate school
Average family income	13 less than $40,000
	14 $40,000 – $80,000
	10 greater than $80,000
Worry chronicity	*M* = 20 years (range 0.6 – 57.5)
Axis I Comorbidity	12 Anxiety Disorder
	14 Depression/Dysthymia