I THINK I CAN: POSITIVE COGNITIONS AND FUNCTIONAL IMPAIRMENT IN DEPRESSION

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I Think I Can: Positive Cognitions and Functional Impairment in Depression

Abstract

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Individuals with depression experience impairment in areas of social, household, and occupational functioning. Cognitive therapy assumes that both depression symptomology and functional impairment should be strongly related to the presence of positive and negative cognitions. The present study evaluated the relationship between positive cognitions and functional impairment in depressed patients. Increased depression severity was significantly related to deficits in impairment. Positive cognitions did not significantly contribute to functional impairment after accounting for depression severity. Post hoc analyses assessed differences in coping attitudes and functional impairment between patients with MDD alone and patients with MDD and comorbid dysthymia. After accounting for depression severity, positive cognitions significantly contributed to differences in levels of functional impairment in the MDD alone group but not the double depression group. The current study reinforces the notion that more severe levels of depression symptomology are associated with significantly higher levels of functional impairment.
Introduction

The definition of a depressive episode includes both the presence of depressive symptoms and clinically significant distress or impairment in social, occupational, or other important areas of functioning (4th ed., text rev.; *DSM-IV-TR*; American Psychiatric Association, 2000; 5th ed.; *DSM-5*; American Psychiatric Association, 2013).

Additionally, severity of major depressive disorder consists of three levels which include ratings of both symptoms and impairment in social or occupational functioning. However, the majority of studies attempting to understand or treat depression focus almost exclusively on depressive symptomatology while neglecting impairment in functioning (Brockow et al., 2004; Becker, Chorpita, & Daleiden, 2011). A recent review revealed that measures of functional impairment were used as treatment outcome measures in less than 5% of clinical trials included in depression study meta-analyses (McKnight & Kashdan, 2009). Symptom measures are also frequently used to define depression severity and remission from depression without accounting for functional impairment (Zimmerman et al., 2006).

Depressive disorders account for a large portion of the societal burden of mental disorders because they produce functional impairment in multiple social and occupational domains (Lépine & Briley, 2011). In the United States, depressive disorders have a lifetime prevalence of nearly 16% and lead to substantial personal, economic, and social loss (Kessler et al., 2003). Approximately 60% of depressed individuals report “severe” or “very severe” impairment in work, household, relationship, or social role functioning (Kessler et al., 2003). Severe impairment in social, occupational, or role functioning is
associated with both personal consequences for the individual and an enormous economic burden on society (Greenberg, Fournier, Sisitsky, Pike, & Kessler, 2015). A major component of this economic burden is associated with lost work productivity due to depression (Wang, Simon, & Kessler, 2003). Further understanding of the relationship between depression and impairment is necessary for limiting the large personal and societal impact associated with depressive disorders.

Symptom measures and measures of impairment in functioning may provide complementary but unique information for both clinicians and researchers. A review of depression treatment studies revealed surprisingly weak relationships among depression symptom scores and measures of impairment in global, social, and occupational functioning (McKnight & Kashdan, 2009). These findings suggest that symptom measures provide some insight regarding an individual’s level of global functioning but do not provide a complete account of an individual’s level of impairment. Functional impairment measures can provide additional information related to specific domains of functioning which may be impaired by symptoms of depression. Measures of domain-specific functioning are also able to describe residual impairment following symptom remission (Pintor, Gastó, Navarro, Torres, & Fañanas, 2003).

The nature of the relationship between depression symptoms and impairment in functioning from depression is still unclear. While it was previously believed that recovery in functional domains and symptomatic recovery occurred simultaneously, subsequent evidence has indicated that improvement in functional domains may lag behind symptom improvement as a delayed impact of treatment (Kennedy, Foy, Sherazi, McDonough, & McKeon, 2007). The relationship between depressive symptoms and
specific domains of functioning may also be bidirectional. For example, poor spousal relationships were found to increase familial strain and elevate depressive symptoms in elderly men (Kivelä, 1994). However, no evidence has suggested a bidirectional relationship between depressive symptoms and occupational functioning (McKnight & Kashdan, 2009). Additionally, overall symptom scores do not seem to target impairment domains equally (Kessler et al., 2003). Impairment was greatest in the social role domain (43.4% rating severe or very severe) and was least in the work role domain (28.1% severe or very severe) (Kessler et al., 2003).

Individual symptoms of depression are associated with different areas of impairment including work impairment, close relationships, social activities, and home management (Fried & Nesse, 2014). Results from 3,703 depressed outpatients in the first stage of treatment showed that the symptoms of sad mood and diminished concentration were debilitating across all domains of functioning (Fried & Nesse, 2014). Early insomnia had a strong effect on work impairment while interest loss was less impairing for work than for other domains. In close relationships, self-blame had a comparably strong effect while fatigue was notably not related. However, the symptom of fatigue had an increased impact on home management while impairment in home management was least related to sad mood. Functioning in social activities was strongly related to lost interest or anhedonia and weakly related to concentration.

Much of the past research on depression has focused on symptom measures rather than multidimensional measures that include both symptoms and functioning. Although emerging research has provided some insight regarding the relationship between depression severity and impairment in functioning, the area of research is still fairly new.
More research is needed to assess how other factors that contribute to the development and maintenance of depression symptoms, such as client attitudes, relate to individual impairment.

**Measuring Functional Impairment**

The DSM’s use of the term functional impairment refers to limitations in important areas of life that are due to psychiatric illness (Üstün & Kennedy, 2009). Individuals with depression may experience household strain, social irritability, financial strain, physical limitations, occupational disruption, restricted activity days at work, increased bed days, or decreased health status (Judd, Paulus, Wells, & Rapaport, 1996). Psychological impairments are generally assessed through the use of four domains including (1) activities of daily living (2) deficits in social functioning, (3) factors related to impaired concentration, persistence, and pace, and (4) deterioration in complex tasks or work-place settings (Greer, Kurian, & Madhukar, 2010). Each of these four domains can be affected in individuals with depressive disorders (Kazama et al., 2011; Hirschfeld et al., 2000; Rock, Roiser, Riedel, & Blackwell, 2014; Adler et al., 2006). Domain-specific impairment can be assessed through subscales of global functioning measures or through separate measures assessing each domain.

**Work and School Activities**

Depression impacts occupational functioning through impaired cognitive processes including memory, attention and concentration, and processing speed (Stewart, Ricci, Chee, Hahn, & Morganstein, 2003). Reduced energy levels associated with depression also lead to issues with both absenteeism (Rost et al., 2005) and presenteeism (Stewart, Ricci, Chee, Hahn, & Morganstein, 2003). Absenteeism is defined by lost
productive time caused by hours or days missed from work including sick leave, tardiness, and early exits from work. Employed individuals with depression have more missed days from work than other employees (Collins et al., 2005). Presenteeism is a more modern concept that refers to reduced work performance while on the job. One common way that employed individuals with depression manifest issues with presenteeism is through completing work tasks more slowly than non-depressed employees (Wang, 2004). Issues with presenteeism can be related to decreased concentration, reduced motivation, and increased time or errors in making decisions (Wang, 2004).

Measuring current occupational functioning can range from recording current employment status to monitoring productivity in the workplace environment (Nieuwenhuijsen 2010). Each of these measures can provide a slightly different perspective on the current, past, and potential employment status of a patient. Employment history is an ideal measure that can provide a well-rounded perspective which includes information about an individual’s ability to maintain a steady job, ability to focus on a career, or ability tolerate the demands of long-term employment. Nuanced measures of occupational impairment such as presenteeism and absenteeism are typically used for individuals who are currently employed and may be experiencing subtle functional deficiencies. However, assessing full employment history may not be practical when working with significantly impaired populations. In participants who are especially impaired, assessing for impairment in family and household responsibilities may help identify more nuanced ratings of occupational or activity impairment.

Social Life and Leisure Activities
Depressive symptoms may impact social functioning in a variety of ways. Interpersonal theory suggests a framework in which emotions guide social interactions throughout the formation and maintenance of interpersonal relationships (Keltner & Kring, 1998). When depression impacts the normal functioning of emotions, the guidance offered by emotions becomes less effective and may negatively impact social functioning (Denniger et al., 2011). Impaired processing of information, including emotional information, in depressed individuals may also contribute to lasting social impairments (Hirschfeld, et al., 2000).

Social impairment associated with depression can manifest as increased irritability, relational discord, or decreased sexual functioning (Dunn et al., 2012). Social functioning is also impacted by certain symptoms of the disorder such as loss of self-esteem and loss of interest in activities themselves (Hirschfeld, et al., 2000). Experiencing lowered self-esteem and anhedonia may influence social functioning by increasing a depressed individual’s likelihood to avoid social interactions and become isolated. Individuals with depression may employ distorted thinking that impacts the way in which they interpret social information, respond to social situations, and make social decisions (Kennedy et al., 2007). Distortions of social situations can lead to changes in behavior such as increased negative self-statements, reassurance seeking, and withdrawal (Kennedy et al., 2007).

Social functioning scales are commonly used in depression outcome studies. However, there is no consensus regarding which measure should function as the gold standard. One of the most widely used measures of social functioning consists of the two items that comprise the social functioning subscale of the Short-form Health Survey (SF-
The two items in the social functioning subscale of the SF-36 represent general social functioning and are associated with remission from depression (Von Korff et al., 2003). However, the two SF-36 items assess the impact of both physical health and emotional health as one construct without assessing the independent impact of each. Another widely used measure of social functioning is the Dyadic Adjustment Scale (Spanier, 1976). The dyadic adjustment scale measures adjustment, satisfaction, and relationship quality in dyadic relationships such as friendships and romantic relationships. Although the dyadic adjustment scale provides an in-depth picture of multiple areas of social functioning, the length of the instrument limits the practical utility of the measure in medical centers or other clinical settings.

**Global Functioning**

Well-established global functioning measures include the Short-form Health Survey (SF-36, the Clinical Global Impression-Current State (CGI-S; Busner & Targum, 2007) Clinical Global Impression-Clinical Improvement (CGI-C; Busner & Targum, 2007) and Global Assessment of Functioning (GAF; Hall, 1995). Measures such as the GAF and CGI assess functioning through a broad assessment of social, psychological, and occupational functioning while excluding impairment due to environmental or physical limitations. The GAF assesses impairment using 10 items rated on a continuum from 0 to 100. Each of the 10 items on the GAF includes information about social/occupational functioning and information relating more directly to psychological symptoms. Another measure that combines multiple domains is the Social and Occupational Functioning Assessment Scale (SOFAS; Goldman, Skodol, & Lave, 1992) that assesses social and occupational impairment independently from psychological
symptoms. The SOFAS is commonly used to present low GAF scores in high-functioning individuals with one or more severe psychological symptoms. The SOFAS also includes impairment due to medical conditions in the overall score. Although the GAF and SOFAS assess both social and occupational functioning, the two domains are grouped together in a way that prevents the study of each domain separately.

**Cognitive Factors and Functional Impairment in Depression**

Cognitive factors play a significant role in the development and maintenance of depression. Cognitive theories of depression suggest that individuals can be predisposed to depression through the establishment of relatively stable negative cognitive schemas about one’s self, the future, and the external world (Beck, 2005). Negative self-schemas form a diathesis-stress relationship in which dysfunctional beliefs lie dormant until evoked by stressful life events. Once triggered, depressogenic schemas lead individuals to have further negative cognitions in the form of negative automatic thinking and information-processing biases (Beck, 2005). The combination of negative perceptual biases and negative automatic thoughts can lead to negative interpretations of events. Negative cognitive factors such as dysfunctional attitudes, automatic thoughts, negative attributional patterns, and cognitive distortions are associated with depressogenic schemas.

Some evidence suggests that Cognitive Behavioral Therapy (CBT) has particular benefit with regard to functional recovery when compared to antidepressant medication. Studies have found that CBT improves work function over and above the impact of antidepressant medication (Sherbourne et al., 2001; Rost et al., 2005). These studies
suggest that changes made during cognitive behavioral therapy may play a unique role in functional impairment.

Positive cognitions also play an important role in depressive disorders, yet the relationship is still poorly understood. Positive thoughts may moderate the relationship between negative life events and dysphoric mood (Bruch, 1997). Individuals who have better positive attitudes may be able to neutralize or compensate for negativity and use coping strategies as a protective factor against depression (Beck, 2005). However, positive thoughts may only have a temporary buffer effect and not have a large impact on an individual’s mood in response to stress at a later time (Lightsey, 1994). The balanced states of minds approach suggests that coping with stress is related to the ratio of positive thoughts to the sum of positive and negative thoughts (Schwartz et al., 2002). After balancing for negative thoughts, more moderately positive thoughts are associated with better overall mental health (Wong, 2010). Positive experiences are also implicated in recovery from depressive or anxious episodes (Brown, Lemyre, & Bifulco, 1992).

**Measuring Positive and Negative Cognitions**

The Dysfunctional Attitudes Scale (DAS) was designed to identify and measure cognitive distortions that could lead to depression (Weissman & Beck, 1978). The self-report measure includes forty items that represent the relative presence or absence of distorted beliefs regarding an individual’s views of self, the world, or the future. Although scale items were designed to reflect cognitions commonly associated with depressed patients, item development did not involve clinical populations. Participants indicate level of agreement with statements using a 7-point Likert scale ranging from 1 (Totally Agree) to 7 (Totally Disagree). An overall score is then calculated by adding
responses from each item. A lower overall score represents more positive and adaptive beliefs while a higher score reflects greater levels of cognitive distortion.

Similar to the DAS, The Automatic Thoughts Questionnaire (ATQ) (Hollon & Kendall, 1980) was created to measure the frequency of negative self-statements associated with depression. Items for the ATQ were derived from automatic thoughts generated by undergraduate students asked to recall negative experiences. Items for both the dysfunctional attitude scale and the ATQ were derived from non-clinical populations and may not be appropriate for use with clinical populations. Both measures also exclusively focus on negative statements while neglecting positive cognitions.

The ATQ was later adapted to measure positive cognitions. Current measures of positive cognitions include the Positive Automatic Thoughts Questionnaire (ATQ-P; Ingram & Wisnicki, 1988) and The Coping Attitudes Scale (CAS; DeJong & Overholser, 2007). Both measures assess for the presence of positive automatic thoughts, yet were derived from different populations. Although intended for clinical use, the Positive Automatic Thoughts Questionnaire items were derived from automatic thoughts generated by undergraduate students asked to recall positive experiences. The ATQ-P includes statements such as “I feel super” that are not consistent with the experiences of depressed patients (ATQ-P; Ingram & Wisnicki, 1988).

The Coping Attitudes Scale items include positive statements which reflect coping attitudes used by individuals with depression. The CAS may better represent the types of positive cognitions that individuals with depression actually experience. Item development was informed by clinical experience and included positive statements made by depressed patients in later points of treatment. In a sample of psychiatric inpatients,
the CAS exhibited strong, negative correlations with the Beck Depression Inventory (BDI) and Beck Hopelessness Scale (BHS) (DeJong & Overholser, 2007). Additionally, the correlation between change scores from the CAS and BDI suggests that changes in CAS ratings over time are inversely associated with changes in BDI scores (DeJong & Overholser, 2007). Information from the CAS can provide clinically relevant ratings of positive cognitions which can inform clinicians of patient strengths or identify potential areas of intervention. Specific ratings regarding the type of positive attitude may provide an even more specific clinical target for intervention. Subscales of the CAS cover five areas: life perspective, personal accomplishment, positive future, self-worth, and coping with problems (DeJong & Overholser, 2007).

The life perspective subscale on the CAS includes attitudes related to life satisfaction in various areas of life (DeJong & Overholser, 2007). Measures of life satisfaction also reflect an individual’s experience of subjective well-being or overall satisfaction. Low scores on the CAS life perspective scale were significantly related to depression severity in a sample of psychiatric outpatients (Fisher & Overholser, 2013). Feelings of low life satisfaction are also associated with both depression and suicide (Koivumaa-Honkanen et al., 2001).

The personal accomplishment subscale is rated on the CAS through items describing feelings of past accomplishment and hope for future accomplishment. Ratings on the personal accomplishment subscale may reflect the extent to which an individual has accomplished personal achievement goals. Low ratings of the personal accomplishment subscale could reflect an individual’s perceptions of goal failure. Rumination in response to goal failure may increase or prolong feelings of depression or
anxiety (Moberly & Watkins, 2010). Feelings of depression in response to goal failure may be especially common for goals related to achievement or promotion rather than goals related to safety or prevention (Jones et al., 2013).

The positive future subscale relates to an individual’s beliefs and plans about the future. Attitudes related to positive expectations of the future reflect an individual’s cognitive style and level of hopelessness. When asked to generate positive future expectancies during a future-focused thinking task, depressed psychiatric inpatients anticipated fewer positive experiences than non-depressed participants (MacLeod & Conway, 2007). Identifying future thinking attitudes can be an important area for intervention. Evidence from internet-based cognitive behavior therapy (ICBT) has shown that cognitive therapy is associated with reduced levels of negative future thinking (Andersson et al., 2013).

Self-worth is measured on the CAS through statements related to positive personal qualities and positive comparisons to other people. Negative beliefs about the self may function as both a symptom of depression as well as a risk factor for the development of depression (Beck, 2005). Personality characteristics associated with low self-esteem may contribute to an individual’s cognitive vulnerability and lead to a predisposition for depression (Orth & Robins, 2013). In a sample of undergraduates, evaluative self-reflection led participants with low self-esteem to feel worse about themselves and led high self-esteem participants to feel better about themselves (Brown & Brown, 2011).

The coping with problems subscale of the CAS assesses attitudes about current life problems and expectations related to coping with future problems. The coping with
problems subscale demonstrated the strongest relationship with measures of depression severity out of the five CAS subscales in a sample of psychiatric outpatients (Fisher & Overholser, 2013). Coping attitudes and behaviors are associated with adaptive responses to psychological distress (Bouchard, Guillemette, & Landry-Leger, 2004). The capacity to effectively solve interpersonal problems may act as a protective factor for suicidality regardless of levels of depression and hopelessness (McLeavey, Daly, Ludgate, & Murray, 1994). Suicide attempters are more likely than psychiatric outpatients with no history of suicidal behavior to endorse ineffectiveness in both general and interpersonal problem solving (Dieserud, 2001). Coping responses can help minimize the negative psychological impact of stressful life events on individuals with depression (Alloy et al., 1992).

Current Study

Individuals with depression experience cognitive, emotional, and physical symptoms. Depression causes significant impairment in the social and occupational functioning of patients. Clinicians and researchers have historically used symptom reduction measures to study depression and evaluate treatment efficacy. Emerging evidence has shown that functional impairment measures and symptom measures assess unique but correlated constructs. Although recent evidence has started to investigate how depression symptom severity and impairment are both related, less is known about the relationship between impairment and outside factors which develop or maintain depression symptoms. Specifically, more information is needed regarding the relationship between coping attitudes and domains of functional impairment. The purpose of the present study is to first, examine how strongly related positive cognitions are to
functional impairment after accounting for depression severity. Second, the study aims to identify which of the five subscales of the CAS are most strongly related to measures of impairment.

It was predicted that positive attitudes would help to protect a person's overall ability to function even when clinically depressed. Specifically, it was predicted that participant scores of total functional impairment would be significantly lower in individuals with higher scores on the Coping Attitudes Scale, even when controlling for depression symptom severity scores. It was also expected that different types of positive attitudes would vary in the degree in which they helped to protect a depressed person’s overall level of functioning. Based on previous research, it was predicted that patients with high scores on the Coping with Problems subscale would have lower scores of functional impairment (Fisher & Overholser, 2013).

**Method**

**Participants**

The sample included adult psychiatric outpatients (estimated n= 175) recruited from the Louis Stokes Veterans Affairs Medical Center in Cleveland, Ohio. Participants were recruited from the Psychiatric Day Hospital program and from the outpatient psychiatry clinic at the VA. Participants met the DSM-IV criteria for a current depressive disorder including MDD recurrent episode, MDD single episode, Dysthymia, Adjustment Disorder with Depressed Mood, or Depression NOS (American Psychiatric Association, 1994) based on SCID-IV diagnosis (SCID v2.0; First, Spitzer, Gibbon, & Williams, 1995). Comorbid psychiatric disorders are common in both the present sample and the general population (Kessler, Chiu, Demler, Merikangas, & Walters, 2005). For
this reason, participants were not excluded based on the presence of comorbid diagnoses including PTSD, substance dependence, panic disorder or GAD. Participants meeting criteria for psychotic or bipolar disorders were excluded from the study.

Measures

The Structured Clinical Interview for the DSM-IV (SCID v2.0; First et al., 1995) (see Appendix A for diagnosis form) is a structured diagnostic interview designed to assess the presence of psychiatric diagnoses in accordance with DSM-IV criteria (American Psychiatric Association, 1994). Because there is no SCID for DSM-5 at this time, DSM-IV diagnostic criteria was used to assess participants (American Psychiatric Association, 2013). Interview questions evaluate the frequency, severity, and duration of psychiatric symptoms. The SCID is used to identify affective, substance use, anxiety, and psychotic disorders. The SCID is a widely accepted measure diagnostic measure that has exhibited adequate reliability and validity. The SCID-IV has shown high test-retest reliability between 0.84 and 1.00 within an interval of 78.5±53 days for Axis I disorders (Schneider et al., 2004). Inter-rater reliability ranges from moderate \((k = .60)\) to excellent \((k = .81)\) for Axis I disorders. Kappa values for diagnoses of MDD range from .66 to .70 (Lobbestael et al., 2011). The current study utilized a modified version of the SCID-IV interview in diagnosing participants. The SCID-IV interview was modified to focus on diagnoses of depressive disorders while screening for other Axis-I disorders and omitting Axis-II disorders. Graduate students trained in administering the SCID-IV completed diagnostic interviews. Training included viewing a SCID-IV training video, observing three administrations completed by a trained interviewer to learn proper administration
techniques, and being observed while administering the SCID-IV during the training period.

The Functional Impairment Scale (see Appendix B) is a self-report questionnaire consisting of three items based on the DSM-IV-TR ratings of impairment. The items measure different domains of functioning such as functioning in work and school activities, social life and leisure activities, or family life and home responsibilities. Participants rate each functioning question on a 5-point Likert scale ranging from 1 (not at all) to 5 (very much). Participants are asked to rate the extent to which their moods and emotional problems have impacted their functioning different life domains during the past month. Recent studies (Greist et al., 2002; Mundt et al., 2001; Sheehan, Harnett-Sheehan, 1996) using similar measures of impairment have found adequate evidence of scale reliability and validity. The Sheehan Disability Scale consists of 3 items assessing the same three constructs scored from 0 to 10 on each item (SDS; Sheehan, Harnett-Sheehan, 1996). Scores from the researcher adapted functioning scale were transformed to match the corresponding anchor descriptions on the Sheehan Disability Scale. Ratings of “Not at all” on the Functional Impairment Scale were recoded from 1 to 0, ratings of “A Little Bit” were recoded from 3 to 5 to match the “Mildly” item on the SDS, “Quite A Lot” were recoded from 4 to 8 or “Markedly” on the SDS, and scores of 5 or “Very Much” on the functioning scale were changed to 10 to correspond with “Extremely” on the SDS.

The Coping Attitudes Scale (CAS; DeJong & Overholser, 2007) (see Appendix C) is rationally-derived self-report measure of positive attitudes held by individuals with depression. The scale is comprised of 23 items that measure different domains such as
personal accomplishment, hopelessness, self-worth, and problem solving. Participants rate each item on a 5-point Likert scale ranging from 0 (not at all) to 4 (very much) regarding how strongly they currently believe each statement. The CAS has demonstrated adequate retest reliability over a 10-week time period ($r = .84$) among college students (DeJong & Overholser, 2007) and high internal consistency in both college students ($\alpha = .96$) and a sample of depressed psychiatric outpatients ($\alpha = .96$) (DeJong & Overholser, 2007). The CAS includes five subscales that measure different domains of positive cognitions: Life perspective, personal achievement, positive future, self-worth, and coping with problems. Subscales were developed using exploratory factor analysis in college student and psychiatric inpatient samples. Analyses suggested a 5-Factor model for the psychiatric inpatient sample that yielded factor loadings ranging from .54 to .92 (DeJong & Overholser, 2007). Support for the subscales has been mixed with a confirmatory factor analysis showing poor fit for the 5-factor model in both outpatient psychiatric and college student samples (Fisher & Overholser, 2013). The life perspective subscale includes attitudes related to life satisfaction such as “life is usually fun, interesting and exciting.” The personal accomplishment domain measures recognition of past accomplishments and is rated on the CAS through items such as “I have accomplished a lot in my life.” Items on the positive future subscale describe optimism toward the future through statements like, “I believe things will go well for me in the future.” Self worth is measured by statements related to positive personal qualities such as, “I think I am a good person”. The coping with problems subscale includes statements related to current life problems and expectations for coping with future problems. The coping with problems domain is measured on the CAS through statements like “I feel I
can handle most problems.” The coping with problems subscale has demonstrated the strongest relationship with depression (Fisher & Overholser, 2013). The Positive Future Subscale has also shown a significant relationship to measures of hopelessness (Fisher & Overholser, 2013).

The Beck Depression Inventory-II (BDI-II; Beck, Steer, & Brown, 1996) measures current symptoms of depression. The BDI-II is a self-report measure that consists of 21 statements reflecting cognitive and affective symptoms of depression. Participants are asked to rate their feelings on each statement on a scale from 0 (neutral) to 3 (very severe). The BDI-II is scored by summing the responses to each item with total scores ranging from 0-63. Higher total scores on the BDI-II indicate greater overall levels of depressive symptomology. The BDI-II has demonstrated high internal consistency in psychiatric outpatients ($\alpha = .86$; Beck et al., 1988). Additionally, the BDI-II has high test-retest reliability ranging from .89 to .93 after one week (Beck, Steer, Ball, & Ranieri, 1996). The BDI-II has also demonstrated high construct validity as it is positively correlated with other measures of depression (Steer, Ball, Ranieri, & Beck, 1997).

**Procedure**

Participants were recruited from two sources at the Veterans Affairs Medical Center in Cleveland, Ohio. Participants were administered the SCID to determine diagnostic eligibility. After completing the diagnostic interview, patients completed a packet of self-report questionnaires. Informed consent (see Appendix D) was obtained prior to administration of the SCID and completion of questionnaires. After completion of the study, all participants received a $10 Wal-Mart gift card in compensation.

*Psychiatric Day Hospital*
In the Psychiatric Day Hospital program, eligible participants were be identified using two methods. Some participants were identified by the director of the Day Hospital based on diagnosis of a depressive disorder. Eligible participants were referred to research assistants for participation in the study. Other participants were identified through accessing records of basic medical information including mental health diagnoses and relevant medical information. After participants were identified, graduate student research assistants asked participants to step outside of the Day Hospital group session and individually explain the study details and procedures. Those who agreed to participate were taken to a separate office where interviewers explained the nature of the study, goals of the study, risks of participating, and procedures. Participants were then asked to read and sign a statement of informed consent prior to data collection.

*Outpatient Mental Health Clinic Consultations*

Participants were also recruited from outpatient mental health clinics at the Veterans Affairs Medical Centers in Cleveland, Ohio. A Registered Nurse working in the clinic identified eligible participants. Eligible participants were identified by depressive symptoms reported upon visiting the mental health clinic. Contact information of patients endorsing depressive symptoms were provided to graduate student research assistants. Patients were mailed information regarding the study and subsequently called by graduate student research assistants. Research assistants then scheduled a time to meet with those who expressed interest in participating.

*Results*

Analyses were performed to examine the relationship between positive cognitions and impairment in depressed patients. Participants included 175 veterans with a
depressive disorder diagnosis. One subject was removed for not completing the Functional Impairment Scale. A missing value analysis revealed that a large proportion (66.67%) of study variables were missing one or more values across 29 subjects. Of the 29 participants with missing data, 18 participants omitted one item across all measures, 5 participants omitted two items, and 6 participants were missing between 3 and 5 data points. Participants missing three or more values were dropped from analyses (n = 6).

Mean substitution was used to replace missing values for participants missing one or two items across all scales. Cases with missing demographic information including marital or employment status were excluded pairwise from analyses only when demographic variables were necessary for analysis. Additional missing demographic data led to some analyses having less that the total 169 participants included in analyses.

Demographic information is summarized in Table 1. The sample included 169 participants (Male: n = 153, African American: n = 102) ranging in age from 22 to 81 years old (M = 52.71, SD = 9.94) All patients met DSM-IV criteria for a depressive disorder including Major Depression-Recurrent (n = 131), Major Depression-Single Episode (n = 12), Dysthymia (n = 19), Depression Not-Otherwise Specified (n = 2), or Adjustment Disorder with Depressed Mood (n = 5). Subject’s presented with a number of comorbid diagnoses including Dysthymia (n = 79), PTSD (n = 26), Substance Dependence (n = 23), Generalized Anxiety Disorder (n = 11), and Panic Disorder (n = 9). As expected, a substantial proportion of the sample included participants who were unemployed (55.42%) or marked “other” when asked about employment (27.71%). Of the participants who marked “other” for employment status, the most common responses included retirement (7.8%) and disability (6.0%).
Participants completed the BDI-II \((M = 28.83, SD = 12.17)\), Coping Attitudes Scale \((M= 49.50, SD = 22.02)\), and scores on the Functional Impairment Scale \((M = 19.36, SD = 7.26)\). The Functional Impairment Scale used in the current study demonstrated adequate internal consistency with a Cronbach’s alpha coefficient of .71. Due to the small number of items comprising the Functional Impairment Scale, the Cronbach’s alpha coefficient may underestimate the internal consistency of the scale. The mean inter-item correlation for the Functioning Scale in the current study was .50 with values ranging from .37 to .70. The inter-item correlation values suggest a good relationship among items. The BDI-II demonstrated excellent internal consistency within the current sample with a Cronbach’s alpha coefficient of .91. The Coping Attitudes Scale also demonstrated excellent internal consistency in this population with the Cronbach’s alpha coefficient of .97.

**Correlation Analyses**

Pearson correlations among functioning, age, depression severity, CAS subscales, and CAS total scores were completed as preliminary analyses (see Table 2). Each of the CAS subscales were significantly correlated with each other and with the total scale score \((r \geq .71, p < .01\) for all subscales). The Functional Impairment Scale was significantly correlated with depression severity \((r = .40, p < .01)\), CAS total score \((r = -.24, p < .01)\), and the Life Perspective \((r = -.24, p < .01)\) and Coping with Problems \((r = -.31, p < .01)\) subscales. Depression severity (BDI-II) was significantly correlated with CAS-Total scores \((r = -.66, p < .01)\) and each subscale \((p < .01\) for all subscales). Age was not significantly correlated with any measures.

**Regression Analyses**
Malhanobis distances were examined in order to examine the data for multivariate outliers. No multivariate outliers were identified in the sample. A hierarchical regression analysis was completed to evaluate the relationship between CAS total scores and impairment in depressed patients (Table 3). For Step 1 of the regression, BDI scores were entered into the model to determine how much variance in type of functional impairment was accounted for by depression severity. Hierarchical regression analyses indicated that patient ratings of functional impairment increased as depression severity scores increased (BDI-II). Depression severity accounted for 15.0% of the variance in the model ($R^2\Delta = .15$, $F\Delta (1,167) = 25.76$, $p<.01$). In step 2 of the regression scores from the CAS were added to the model in order to assess the relationship between coping attitudes and functional impairment. Ratings of positive cognitions (CAS) did not significantly contribute to the model after accounting for depression severity.

A hierarchical regression analysis was conducted to assess the relationships among the life perspective, self worth, personal accomplishment, coping with problems, and positive future subscales of the CAS and impairment (Table 4). Step 1 of the regression included BDI scores in order to determine how much variance in functional impairment scores was accounted for by depression severity. Patient ratings of functional impairment increased as depression severity scores increased (BDI-II). Depression severity accounted for 15.0% of the variance in the model ($R^2\Delta = .15$, $F\Delta (1,167) = 25.76$, $p<.01$). In step 2, scores from each of the CAS subscales were added to the model in order to assess the relationship between coping attitude types and functional impairment. The CAS subscales did not significantly contribute to the model after accounting for depression severity.
Post-hoc Analyses

A large proportion of the participants (n = 78) were diagnosed with “double depression” which consists of a primary depressive disorder and comorbid dysthymia. Post-hoc analyses were conducted in order to evaluate group differences in the ability of positive cognitions to protect functioning in depressed patients. It was hypothesized that positive cognitions would help to protect functioning in individuals with major depression alone significantly more than patients in the double depression group.

Subjects were grouped into patients experiencing major depression alone (n = 65) and patients experiencing double depression (n = 78). Subjects in the major depression group met criteria for MDD-single episode (n = 8) or MDD-recurrent episode (n = 57) without a comorbid diagnosis of dysthymia. Patients in the major depression group presented with a number of comorbid conditions including PTSD (n = 11; 16.9%), Substance Dependence (n = 9; 13.8%), and Panic Disorder (n = 5; 7.7%). The double depression group included patients diagnosed with dysthymia as a comorbid diagnosis (n = 78) to either MDD single-episode or MDD recurrent-episode. Subjects diagnosed with dysthymia as a primary diagnosis (n = 19), adjustment disorder with depressed mood (n = 5), and Depression NOS (n = 1) were removed from analyses. Subjects in the double depression group also exhibited comorbid conditions including PTSD (n = 15; 15.4%), Substance Dependence (n = 12; 14.1%), and GAD (n = 8; 9.0%).

Participants experiencing major depression were compared with participants experiencing double depression on a number of demographic variables (see Table 5). An independent t-test was calculated to compare the age of patients with major depression or double depression in the sample. There was no significant difference in the age of
individuals with major depression ($M = 52.70, SD = 9.05$) and individuals with double depression ($M = 52.96, SD = 10.34$), $t(166) = .17, ns$.

A series of chi square analyses were used to assess group differences in marital status and employment status. Race was categorized as a dichotomous variable of Caucasian or Not Caucasian. The major depression group consisted of more Caucasian participants than the double depression group with a Pearson Chi-Square value of 12.53, $p < .01$. Due to the small number of female participants, gender comparisons were not completed. The major depression group and double depression group did not significantly differ in marital status or employment status.

Scores on the Coping Attitudes Scale, Beck Depression Inventory, and Functional Impairment Scale were also examined for group differences using independent samples t-tests (Table 6). Participants with double depression obtained higher levels of functional impairment ($M = 20.79, SD = 6.25$) than individuals with major depressed ($M = 18.82, SD = 87.97$), ($t(166) = 1.63, p < .05$). Patients with major depression and patients with double depression showed no difference in total scores on the Coping Attitudes Scale ($t(166) = 1.55, p = ns$) or the Beck Depression Inventory ($t(166) = 1.51, p = ns$). Subjects in the major depression group reported higher scores on the life perspective subscale ($M = 11.03, SD = 5.30$) than the double depression group ($M = 9.55, SD = 4.42$), ($t(141) = 1.79, p< .05$). Participants with major depression also scored higher on the positive future subscale ($M = 7.86, SD = 5.38$) than patients with double depression ($M = 6.35, SD = 4.49$), ($t(141) = 1.796, p < .05$). Independent samples t-test analyses were also conducted to assess group differences on areas of functional impairment. Individuals with double depression reported significantly higher levels of social life and leisure impairment ($M =$
3.65, SD = 1.12) than depressed individuals with major depression alone (M= 3.93, SD = .89).

Separate hierarchical regression analyses were completed for subjects with major depression and subjects with double depression. In both models, step 1 of the regression included BDI scores and step 2 included all of the CAS subscales. In the double depression group (Table 7), depression severity significantly contributed to the model. Depression severity accounted for 9.9% of the variance in the model ($R^2\Delta = .10, \ F\Delta (1,77) = 8.310, \ p < .01$). Positive cognitions did not significantly contribute to the model after accounting for depression severity ($R^2\Delta = .06, \ F\Delta (1,76) = 1.05, \ p = ns$).

In the major depression alone group (Table 8), depression severity accounted for 19.9% of the variance in the model ($R^2\Delta = .20, \ F\Delta (1,64) = 15.63, \ p < .01$). Ratings of positive cognitions (CAS) were entered at the second step and accounted for 16.4% of the variance after accounting for depression severity ($R^2\Delta = .16, \ F\Delta (1,63) = 2.98, \ p< .05$). The Coping with Problems and Positive Future subscales significantly contributed to the model. The remaining subscales did not significantly improve the regression model.

Discussion

The present findings suggest that the Functional Impairment Scale (FIS) is a clinically useful measure for assessing global functioning and impairment in depressed patients. The FIS is a brief self-report measure of impairment. Global functional impairment is assessed by measuring three related domains of functioning: social life and leisure, work and school, and family and home life. The FIS improves on current measures of impairment by providing a measure that is easy to administer and has a clear and simple scoring system. The FIS also allows for the assessment of patients who are
currently unemployed by assessing for other types of activities such as household and family responsibilities and school responsibilities.

In the current study, the Functional Impairment Scale demonstrated adequate psychometric properties. The Functional Impairment Scale demonstrated adequate internal consistency and strong concurrent validity in the overall sample. The moderate alpha value likely reflects the small number of items on the FIS rather than the true reliability of the measure. The small number of items on the FIS suggests that Cronbach’s alpha may not be the best way to measure reliability for the FIS. It may be useful to gather further estimates of reliability for the Functional Impairment Scale including test-retest reliability.

Higher depression severity scores were associated with higher levels of impairment. Additionally, patients diagnosed with double depression reported significantly higher levels of impairment than the major depression alone group. Patients with greater depression severity scores (BDI-II scores) endorsed higher levels of global functional impairment. In other words, the extent of impairment a depressed patient experiences varies based on ratings of depressive symptom severity. The present finding suggests that depressive symptoms are key contributors to the experience of functional impairment in depressed patients. Depressive symptoms are associated with substantial functional impairment (Papakostas et al., 2009). The present finding suggests that targeting symptom reduction in treatment may also help to improve aspects of client functioning. Additionally, targeting areas of functioning through building specific skills may also aid in reducing depressive symptom severity.
The relationship between depression severity and functional impairment in the present study was moderate, explaining only 15% of the variance in impairment ratings. The moderate relationship in the current study matches similar studies suggesting that symptom severity does not completely account for the relationship between depression and impairment (McKnight & Kashdan, 2009). The present finding reinforces the importance for researchers and clinicians to utilize measures of both symptom severity and impairment when working with depressed patients. By using separate measures for symptoms and severity, both clinicians and researchers can better assess for remission from depression. Although depressive symptoms contribute to functional impairment, patients may still experience impairment following symptom remission (Rhebergen et al., 2009). Impairment measures can be used to identify continued areas of impairment in therapy patients who are experiencing symptom reduction. Identifying areas of impairment can also provide targets for treatment goals. Domains of impairment may be treated as a separate target by providing general skills through psychoeducation or social skills training or providing intervention for more targeted skills such as assertiveness training. With certain clients, such as those who endorse sub-threshold depressive symptoms with significant impairment or distress, it may be beneficial to initially focus treatment on reducing impairment rather than symptom reduction. Other strategies such as initiating an exercise program target client functioning and are effective in reducing depressive symptomology (Blumenthal, Smith, & Hoffman, 2012). Research on measures of other constructs related to both overall functional impairment and specific domains of functioning are needed in order to fully understand the relationship between depression diagnoses and impairment.
Higher scores of coping attitudes were associated with lower levels of functional impairment. In depressed individuals, positive cognitions are associated with recovery from depression and general well-being (MacLeod & Moore, 2000). Positive attributional styles for positive events are also implicated in the recovery from depression (Johnson et al, 1998). In the current study, the relationship between coping attitudes and the Functional Impairment Scale was somewhat weaker than expected.

The Coping Attitudes Scale exhibited strong internal consistency and concurrent validity in the current study. All subscales of the CAS were strongly related to total scores of positive cognitions and each of the five subscales. Total scores on the Coping Attitudes Scale were moderately related to functional impairment and strongly related to depression severity. These findings are consistent with previous research using the Coping Attitudes Scale in a sample of adult psychiatric outpatients (Fisher & Overholser, 2013). When examined at the subscales level, each of the five CAS subscales were strongly associated with depression severity scores.

The five CAS subscales assess multiple domains of positive cognitions including attitudes related to Life Perspective, Personal Achievement, Positive Future, Self-Worth, and Coping with Problems. In the current sample, the Life Perspective and Coping with Problems subscales were moderately related to scores of functional impairment. The Positive Future subscale showed a small relationship to ratings of impairment. The Self-Worth and Personal Achievement subscales were not significantly related to impairment. These findings suggest that while low ratings of all CAS subscales are related to depression, only three of the CAS subscales are associated with impairment. The present finding may provide an opportunity for clinicians to target cognitive interventions
towards helping patients adopt coping attitudes related to the domains of positive future, coping with problems, and a positive perspective of life prior to working on a client’s self-worth or thoughts of personal achievement. The findings from the CAS subscales may also suggest that maintaining negative attitudes related to coping with problems, the future, and life in general may lead to significant impairment over time.

Contrary to hypotheses, Coping Attitudes Scale total scores did not show a statistically significant relationship to functional impairment after statistically accounting for the effect of depression severity. Lack of support for the relationship between the CAS and impairment ratings over and above depression severity can be accounted for in a number of ways. The current sample included only individuals who were currently experiencing a depressive disorder. Given the nature of the sample, measures of impairment and depression severity were higher on average than what would be expected in the general population. Similarly, in the current sample measures of coping attitudes were lower than what would be expected in the general population. Future research may want to include both individuals who are not diagnosed with depression and individuals who exhibit depressive symptoms without meeting full criteria.

The large number of individuals with double depression in the sample may have obscured the relationship between coping attitudes and impairment. The present results may reflect a difference between major depression and double depression. Double depression, or dysthymia with a comorbid diagnosis of major depression, is considered a distinctive subtype of unipolar depression (Keller, Hirschfeld & Hanks, 1997). Individuals with chronic forms depression such as double depression exhibit more severe negative cognitions than patients with MDD alone (Riso et al., 2003). Patients with
double depression also experience higher levels of hopelessness than individuals with either major depression or dysthymia alone (Joiner, Cook, Hersen & Gordon, 2007). For these reasons, it was expected that cognitive differences between individuals with double depression and individuals with major depression may be reflected in scores of coping attitudes, depression severity, and functioning.

Post hoc analyses were conducted to account for the large number of patients diagnosed with double depression within the sample. Double depression patients endorsed higher levels of functional impairment than patients who were diagnosed with major depression alone. The present finding is consistent with the literature which suggests that individuals with chronic depressive disorders such as double depression or dysthymia experience greater social and physical impairment (Buist-Bouwman, de Graaf, Vollebergh, Alonso, Bruffaerts, & Ormel, 2006). However, in the current study, patients in the major depression group and double depression group did not differ in ratings of depression severity or total scores of positive cognitions. These findings can be explained in a number of ways. One potential explanation for these findings is that individuals with double depression may experience a cumulative effect of impairment over time and may even begin to generate their own stressful situations (Hammen, 1991). Additionally, while all forms of depression are associated with impairment, chronic forms of depression such as double depression are associated with fewer available social supports (Berndt et al., 2000), divorce or marital separation, and unemployment (Berndt et al., 1998). Interpersonal theories of depression suggest that depressed individuals generally interact with others in a way that elicits rejection and increases their risk for future depressive symptomology (Hames, Hagan, & Joiner, 2013). The difference in level of
impairment despite similar symptom severity levels further emphasizes the need for clinicians and researchers to use measures of both symptom severity and impairment in order to better identify client impairment. Clinicians can use impairment measures to fully assess impairment levels upon client intake, set treatment goals, track progress, and determine when to terminate.

Patients with major depression alone reported higher ratings on the Positive Future and Life Perspective subscales of the CAS than individuals with double depression. The Positive Future subscale includes items that assess hope and excitement about the future. Previous research has demonstrated that the Positive Future subscale is negatively correlated with measures of hopelessness (Fisher & Overholser, 2013). These findings are consistent with the literature suggesting that individuals with major depression experience lower levels of hopelessness than individuals with double depression (Joiner, Cook, Hersen & Gordon, 2007). The present finding suggests that individuals in the major depression alone group were more hopeful than individuals with double depression.

In individuals with major depression alone, coping attitudes significantly contributed to the variance of functional impairment scores after accounting for depression severity. However, in patients with double depression, Coping Attitudes Scale total scores did not show a statistically significant relationship to functional impairment after statistically accounting for the effect of depression severity. However, the finding that the effect did not emerge when using the total scale score indicates that the present finding should be interpreted with caution. The present findings may reflect a model of recovery of depression in which attributional styles of positive events aids in recovery. A
positive attributional style reflects a cognitive process that occurs when an individual attributes positive events to their own efforts or stable or global characteristics (Priester & Clum, 1992). In the model, depressed individuals who make global, stable attributions for positive events will be more likely to regain hopefulness and recover from depression (Needles & Abramson, 1990). Positive attributions are a separate but related construct to coping attitudes and may reflect a similar process. Additionally, the present findings may reflect the relative importance of specific types of coping attitudes on functional recovery from depression. In the current study, scores on the positive future, coping with problems, and life perspective subscales were significantly associated with lower scores of functional impairment. The patients in the major depression group reported higher ratings of both the positive future and life perspective group. In combination, these findings suggest that attitudes related to a positive life perspective and related to positive thoughts about the future are especially important for functioning. An alternative explanation is that while individuals with double depression may have the same amount of positive cognitions as individuals with major depression, but individuals with double depression may experience difficulty utilizing coping attitudes to aid in functioning.

The results of the present study should be considered in light of several limitations. One limitation is that the current study included only individuals who were currently experiencing a depressive disorder. With the current sample, measures of impairment and depression severity were higher on average than what would be expected in the general population and measures of coping attitudes were lower than what would be expected in the general population. Previous research in a college student population found a mean of 64.34 on the CAS and a mean of 9.58 on the BDI-II (Fisher &
In the current sample, participants scored a mean of 49.49 on the CAS overall and a mean of 27.69 on the BDI-II. Despite the restricted range of scores in the current sample, the population of depressed patients used in the present study offered the opportunity to assess patients as they were currently experiencing psychopathology. The current sample allowed for the opportunity to assess how depression diagnoses impact the social, occupational, and family functioning of individuals currently in treatment in an outpatient mental health clinic. Additionally, the post hoc analyses from the current study may have been underpowered after splitting the overall sample into the major depression and double depression groups.

The measure included in the present study provided a clinically useful measure for the separate assessment of patient functioning and depression symptom severity. The current study reinforces the notion that more severe levels of depression symptomatology are associated with significantly higher levels of impairment. However, the present correlation between depression symptom severity and impairment does not account for the entire relationship between a depressive diagnosis and the psychosocial impairments that patients face. Coping attitudes are also related to lower levels of functional impairment and lower depression severity. Chronicity of depression may also play a role in levels of impairment in depressed individuals. The current study provided evidence that individuals diagnosed with comorbid major depression and dysthymia experience higher levels of impairment. In particular, the present study provided preliminary evidence that in individuals with major depression alone, coping attitudes are associated with lower levels of depression after accounting for depression severity. The present finding suggests that positive cognitions may be more beneficial for individuals with
major depression alone rather than double depression. Assessing impairment as a separate construct from symptom severity and further researching factors related to impairment will help both clinicians and researchers gain new insight into the psychosocial impairment experienced by individuals with depression.
Table 1

Demographic Information among 169 Depressed Patients

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td><strong>Mean (SD)</strong></td>
<td>52.71 (9.94)</td>
</tr>
<tr>
<td><strong>% Male</strong></td>
<td>90.8%</td>
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<td><strong>% Caucasian</strong></td>
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<td><strong>% In Relationship</strong></td>
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<td>% Single, Never Married</td>
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<td><strong>% Unemployed</strong></td>
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<td>% Employed Part-Time</td>
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</tr>
<tr>
<td>% Disability</td>
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<tr>
<td>% Retired</td>
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<tr>
<td>% Other</td>
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<tr>
<td><strong>% At least 1 Comorbid Dx (%)</strong></td>
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<td>% Substance Dependence</td>
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<td>% Dysthymia</td>
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Table 2

*Correlations Examining Relationships among Functional Impairment, Age, Depression Severity, and Coping Attitudes in Depressed Patients*

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<tr>
<th></th>
<th>FIS</th>
<th>Age</th>
<th>BDI-II</th>
<th>CAS</th>
<th>PA</th>
<th>LP</th>
<th>CP</th>
<th>SW</th>
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<td>-.53**</td>
<td>.88**</td>
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<td>Life Perspective</td>
<td>-.24**</td>
<td>.02</td>
<td>-.59**</td>
<td>.94**</td>
<td>.76**</td>
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<td>(LP)</td>
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<td>Coping with</td>
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<td>.14</td>
<td>-.64**</td>
<td>.94**</td>
<td>.75**</td>
<td>.87**</td>
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<td>(CP)</td>
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<td>-.55**</td>
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<td>.79**</td>
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<td>Positive Future</td>
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*Note.** p<.01 and *p<.05*
Table 3

*Hierarchical Multiple Regression Analysis Examining Functional Impairment and Coping Attitudes in Depressed Patients (N=169)*

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>SE B</th>
<th>β</th>
<th>t</th>
<th>R²</th>
<th>R² change</th>
<th>F change</th>
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<tr>
<td>BDI-II</td>
<td>.231</td>
<td>.046</td>
<td>.388</td>
<td>5.076**</td>
<td>.150</td>
<td>.150</td>
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<tr>
<td>CAS - Total</td>
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<td>.160</td>
<td>.172</td>
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*Note. **p<.01*
Table 4

*Hierarchical Multiple Regression Analysis Examining CAS Subscales and Functioning in Depressed Patients (N=169)*

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<th>β</th>
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<th>R²</th>
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<td>.777</td>
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<tr>
<td>Coping with Problems</td>
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<td>.188</td>
<td>-.407</td>
<td>2.277*</td>
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</table>

*Note:* *p<.05, **p<.01*
Table 5

Demographic information among 65 patients with MDD and 78 patients with Double Depression

<table>
<thead>
<tr>
<th></th>
<th>MDD</th>
<th>Double Depression</th>
<th>Statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>65</td>
<td>78</td>
<td></td>
</tr>
<tr>
<td>Age: Mean (SD)</td>
<td>52.34 (9.05)</td>
<td>52.96 (8.43)</td>
<td>.17</td>
</tr>
<tr>
<td>% Male</td>
<td>91.8%</td>
<td>94.8%</td>
<td></td>
</tr>
<tr>
<td>% Caucasian</td>
<td>35.5%</td>
<td>26.9%</td>
<td>12.529*</td>
</tr>
<tr>
<td>% Not in a Relationship</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% Single, Never Married</td>
<td>28.1%</td>
<td>17.3%</td>
<td></td>
</tr>
<tr>
<td>% Divorced</td>
<td>34.4%</td>
<td>5.3%</td>
<td></td>
</tr>
<tr>
<td>% Separated</td>
<td>9.4%</td>
<td>10.7%</td>
<td></td>
</tr>
<tr>
<td>% Widowed</td>
<td>1.6%</td>
<td>16%</td>
<td></td>
</tr>
<tr>
<td>% Married</td>
<td>26.6%</td>
<td>16%</td>
<td></td>
</tr>
<tr>
<td>% Cohabitating</td>
<td>0%</td>
<td>0.3%</td>
<td></td>
</tr>
<tr>
<td>% Unemployed</td>
<td>77.6%</td>
<td>78.6%</td>
<td>.508</td>
</tr>
<tr>
<td>% Employed Full-Time</td>
<td>12.9%</td>
<td>6.8%</td>
<td></td>
</tr>
<tr>
<td>% Employed Part-Time</td>
<td>4.8%</td>
<td>4.1%</td>
<td></td>
</tr>
<tr>
<td>% Disability</td>
<td>3.2%</td>
<td>8.1%</td>
<td></td>
</tr>
<tr>
<td>% Retired</td>
<td>6.4%</td>
<td>8.1%</td>
<td></td>
</tr>
<tr>
<td>% At least 1 Comorbid Dx (%)</td>
<td></td>
<td></td>
<td>1.602</td>
</tr>
<tr>
<td>% PTSD</td>
<td>16.9%</td>
<td>15.4%</td>
<td></td>
</tr>
<tr>
<td>% Substance Dependence</td>
<td>13.8%</td>
<td>14.1%</td>
<td></td>
</tr>
<tr>
<td>% GAD</td>
<td>4.6%</td>
<td>9.0%</td>
<td></td>
</tr>
<tr>
<td>% Panic Disorder</td>
<td>7.7%</td>
<td>5.1%</td>
<td></td>
</tr>
</tbody>
</table>

Note. *p<.05—all analyses are \( \chi^2 \) except for age
Table 6

*Independent Samples T-Tests comparing 65 patients with MDD alone and 78 patients with Double Depression on measures of Functioning, Coping Attitudes, and Depression Severity*

<table>
<thead>
<tr>
<th></th>
<th>MDD</th>
<th>Double Depression</th>
<th>Statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>N</strong></td>
<td>65</td>
<td>78</td>
<td></td>
</tr>
<tr>
<td><strong>Functional Impairment</strong></td>
<td>18.82 (7.97)</td>
<td>20.79 (6.25)</td>
<td>1.629*</td>
</tr>
<tr>
<td><strong>Depression Severity (BDI)</strong></td>
<td>27.79 (11.26)</td>
<td>30.60 (10.91)</td>
<td>1.510</td>
</tr>
<tr>
<td><strong>Coping Attitudes Scale – Total Score</strong></td>
<td>49.94 (23.41)</td>
<td>44.37 (19.61)</td>
<td>1.548</td>
</tr>
<tr>
<td><strong>Life Perspective</strong></td>
<td>11.03 (5.30)</td>
<td>9.55 (4.42)</td>
<td>1.789*</td>
</tr>
<tr>
<td><strong>Personal Accomplishment</strong></td>
<td>6.83 (3.37)</td>
<td>6.47 (2.92)</td>
<td>.681</td>
</tr>
<tr>
<td><strong>Positive Future</strong></td>
<td>7.86 (5.38)</td>
<td>6.35 (4.49)</td>
<td>1.796*</td>
</tr>
<tr>
<td><strong>Self Worth</strong></td>
<td>10.48 (4.18)</td>
<td>9.38 (3.85)</td>
<td>1.615</td>
</tr>
<tr>
<td><strong>Coping with Problems</strong></td>
<td>13.73 (7.26)</td>
<td>12.60 (6.07)</td>
<td>1.004</td>
</tr>
</tbody>
</table>

*Note. *p*<.05
Table 7

Hierarchical Multiple Regression Analysis Examining CAS Subscales and Functioning in Patients with Double Depression (N=78)

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>SE B</th>
<th>β</th>
<th>t</th>
<th>R²</th>
<th>R² Δ</th>
<th>FΔ</th>
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<td>Step 1</td>
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<td></td>
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<tr>
<td>BDI-II</td>
<td>.180</td>
<td>.062</td>
<td>.314</td>
<td>2.883**</td>
<td>.099</td>
<td>.099</td>
<td>8.310**</td>
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<tr>
<td>Step 2</td>
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<tr>
<td>Life Perspective</td>
<td>-.235</td>
<td>.342</td>
<td>-.166</td>
<td>6.88</td>
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<tr>
<td>Personal Accomplishment</td>
<td>.389</td>
<td>.473</td>
<td>.181</td>
<td>.821</td>
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<tr>
<td>Positive Future</td>
<td>-.081</td>
<td>.265</td>
<td>-.058</td>
<td>.305</td>
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<tr>
<td>Self Worth</td>
<td>.173</td>
<td>.335</td>
<td>.106</td>
<td>.761</td>
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<tr>
<td>Coping with Problems</td>
<td>-.292</td>
<td>.246</td>
<td>-.284</td>
<td>1.190</td>
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*Note.* **p<.01
Table 8

Hierarchical Multiple Regression Analysis Examining CAS Subscales and Functioning in patients with MDD (N=65)

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>SE B</th>
<th>β</th>
<th>t</th>
<th>R²</th>
<th>R² Δ</th>
<th>F Δ</th>
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<td><strong>Step 1</strong></td>
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<tr>
<td>BDI-II</td>
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<td>.079</td>
<td>.446</td>
<td>3.954**</td>
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<td>.199</td>
<td>15.634**</td>
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<td>Life Perspective</td>
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<tr>
<td>Personal Accomplishment</td>
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<tr>
<td>Positive Future</td>
<td>.650</td>
<td>.359</td>
<td>.439</td>
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<tr>
<td>Self Worth</td>
<td>.566</td>
<td>.371</td>
<td>.297</td>
<td>1.526</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Coping with Problems</td>
<td>-.763</td>
<td>.263</td>
<td>-.696</td>
<td>2.905*</td>
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<td></td>
</tr>
</tbody>
</table>

*Note* *p<.05 **p<.01
Appendix A

History of Present Illness

Depressive Disorder

Age of first episode
Duration of symptoms (months, years)
Number of episodes (including the present episode)

Anxiety Disorder

Current Diagnosis
Yes No
Past Diagnosis

Age of first episode
Duration of symptoms (months, years)

PTSD/Trauma

Current Diagnosis
Yes No
Past Diagnosis
Yes

Age of first episode
Duration of symptoms (months, years)

Psychotic Disorder

Current Diagnosis
Yes No
Past Diagnosis

Age of first episode
Duration of symptoms (months, years)

Substance Use Disorder

Current Diagnosis
Yes No
Past Diagnosis
Yes

Age of first episode
Duration of symptoms (months, years)

Past Treatment

Have you ever been treated as an outpatient for psychiatric reasons? Yes
No

Have you ever been hospitalized for psychiatric problems? Yes No

How many times? _____
Appendix B

Functional Impairment Scale

**Q1.** During the past month, how much have your work and school activities been impaired by your moods and emotional problems?

1=Not at all    2=A little bit    3=Somewhat    4=Quite a lot    5=Very Much

**Q2.** During the past month, how much have your social life and leisure activities been impaired by your moods and emotional problems?

1=Not at all    2=A little bit    3=Somewhat    4=Quite a lot    5=Very Much

**Q3.** During the past month, how much have your family life and home responsibilities been impaired by your moods and emotional problems?

1=Not at all    2=A little bit    3=Somewhat    4=Quite a lot    5=Very Much
## Appendix C

**Coping Attitudes Scale**

<p>| Right now, How strongly do you believe these statements? |
|---|---|
| 0 | 1 | 2 | 3 | 4 | (A) I am a worthwhile person |
| 0 | 1 | 2 | 3 | 4 | (B) I have accomplished a lot in my life |
| 0 | 1 | 2 | 3 | 4 | (C) I am at least as good as most other people |
| 0 | 1 | 2 | 3 | 4 | (D) If I try hard, I can accomplish whatever I want |
| 0 | 1 | 2 | 3 | 4 | (E) I believe things will go well for me in the future |
| 0 | 1 | 2 | 3 | 4 | (F) I have been successful in some important areas of my life |
| 0 | 1 | 2 | 3 | 4 | (G) Even when problems get bad, I know they will get better |
| 0 | 1 | 2 | 3 | 4 | (H) I am hopeful about my future |
| 0 | 1 | 2 | 3 | 4 | (I) I think I am a good person |
| 0 | 1 | 2 | 3 | 4 | (J) I believe I can make my future what I want it to be |
| 0 | 1 | 2 | 3 | 4 | (K) I have many good qualities |
| 0 | 1 | 2 | 3 | 4 | (L) I feel I can handle most problems |
| 0 | 1 | 2 | 3 | 4 | (M) I am thankful for the good things I have in my life |
| 0 | 1 | 2 | 3 | 4 | (N) Even when I am having problems, I know I can tolerate them |
| 0 | 1 | 2 | 3 | 4 | (O) I have a lot of exciting plans for the future |</p>
<table>
<thead>
<tr>
<th></th>
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<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
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</tr>
</tbody>
</table>

(P) Even when I am having problems, I know they will not last very long

(Q) When problems happen, I can usually make the best of a bad situation

(R) I know that I can make friends with other people

(S) My current problems are not very bad

(T) Life is usually fun, interesting and exciting

(U) I believe I can cope with almost any problem I might have

(V) Good things may not always come easy, but they do come

(W) Although losing something can be hard, it often provides a new beginning

Coping Attitudes Scale: © overholser@CWRU.edu 2007
Appendix D

DESCRIPTION OF RESEARCH BY INVESTIGATOR

NOTE: The consent form must include the following section headings:
I. Purpose of the Study   VI. Alternative Procedure(s)/Treatment(s)
II. Description of the Study   VII. Privacy, Confidentiality, and Use of Research Results
III. Inconveniences   VIII. Special Circumstances
IV. Discomforts/Risks/Side Effects   IX. Contact Information
V. Benefits

TO POTENTIAL PARTICIPANTS: Federal regulations require written informed consent before participation in a research study. This is to be certain that research volunteers know the nature and risks of the study, so they can make an informed decision about participation. You are asked to read the following information and discuss it with the investigator, so that you understand this research study and how it may affect you. Your signature on this form means that you have been fully informed and that you freely give your consent to participate. It is also important that you read and understand these principles that apply to all individuals who agree to participate in the research project below:

1. Taking part in the research is entirely voluntary.
2. You may not personally benefit from taking part in the research but the knowledge obtained may help the health care professionals caring for you to better understand the disease/condition and how to treat it.
3. You may withdraw from the study at any time without anyone objecting and without penalty or loss of any benefits to which you are otherwise entitled.
4. If, during your participation in the research project, new information becomes available concerning your condition (disease) or concerning better therapies, which may affect your willingness to continue in the research project, your doctor will discuss the
new information with you and will help you make a decision about continuing in the research.

5. The purpose of the research, how it will be done, and what your part in the research will be, is described below. Also described are the risks, inconveniences, discomforts, and other important information, which you need to make a decision about whether or not you wish to participate. You are urged to discuss any questions, concerns, or complaints you have about this research with the research staff members.

I. PURPOSE OF THE STUDY:

We are asking you to participate in a research study investigating depression. You are being asked to participate because it is our understanding that you may be experiencing symptoms of depression. The purpose of this research involves gathering information about the optimal assessment and treatment of depression. Information used by the research study includes your medical record (chart), the information packets that you will be asked to complete, and the information discussed in the brief interview.

The research study is a joint project between the Louis Stokes Cleveland Department of Veterans Affairs Medical Center (LSCDVAMC) and Case Western Reserve University (CWRU). We plan to enroll 200 participants at the VA Medical Center.

II. DESCRIPTION OF STUDY:

If you agree to participate in the study, you will complete one study visit. The visit will last for approximately one to one and a half hours and will take place at the Wade Park Veterans Affairs Medical Center. Participation in this study involves completing several questionnaires and a brief interview about depression and other psychological problems. The first part of the study involves a series of yes/no questions pertaining to depression or other psychological problems that you may have encountered. The second part of today’s meeting involves the completion of questionnaires pertaining to depression, hopelessness, coping, life events, and physical activity. If during the interview, you indicate thoughts of suicide, we will offer to contact your mental health provider to discuss this with him/her on your behalf. If we believe you are at immediate risk for suicide, we will contact Dr. Ridley or another mental health provider to evaluate you, and you may be escorted to the Psychiatric Emergency Room.

III. INCONVENIENCES:

The information requested from you today will take approximately one to one and a half hours to complete.

IV. DISCOMFORTS / RISKS / SIDE EFFECTS:

The risks of this study primarily involve talking about emotional issues and protecting your confidentiality. Although it is unlikely that you will be exposed to any risks by
participating in this study, you will be asked a variety of questions about your life and emotions. Some of the questions may force you to confront various emotions as you discuss these different issues. If you experience distress during the interview, you may discontinue with the study and will have opportunity to discuss your thoughts and feelings with the research assistant. If you experience distress after the interview you may contact any of your primary providers in the outpatient clinic to discuss your issues/concerns.

V. BENEFITS:

You will not directly benefit from participating in this study. However, your participation in this study may aid in our understanding of the development and treatment of depression.

VI. ALTERNATIVE PROCEDURE(S) / TREATMENT(S):

Because this study offers no direct benefits to participants, your only alternative is to not participate.

VII. PRIVACY, CONFIDENTIALITY, AND USE OF RESEARCH RESULTS:

By joining this study, you give the investigators your permission for them to collect data from your medical records to determine if you are eligible and if you remain eligible to participate in the study.

Any information obtained about you in this study will be treated as confidential and will be safeguarded in accordance with the Privacy Act of 1974. Your research records will be labeled with a code number. Electronic research records will be kept in a password-protected computer file in a locked office that only the study team has access to. Research records will be kept indefinitely in a locked file cabinet. In order to comply with federal regulations, records identifying you may be reviewed by authorized representatives of the Institutional Review Board of the LSCDVAMC, VA, authorized representatives of the Case Western Reserve University, Dr. Overholser, students authorized by him, or other federal regulatory officials responsible for oversight of human subject protection. By signing this document, you consent to such inspection. Findings from this study may be presented at a professional meeting or published in a professional journal; however, no names or other information that would allow for subjects to be identified will be included in these presentations.

VIII. SPECIAL CIRCUMSTANCES:

Financial Considerations

Your participation in this research study will be done at no cost to you.
You will be compensated for your time and effort for being in this research project. You will be given $10.00 in cash for completion of both the interview and the information packet. If you withdraw from the study before completing both the interview and the information packet, you will not be compensated in any way. The compensation will be handed to you by the study personnel when you complete and hand the information packet to the study personnel.

Ending Participation
You may stop your participation in this study at anytime. In addition, the investigators may stop your participation in this study without your consent, for example, if they think it will be in your best interest, if you don’t follow the study plan, if you experience a study-related injury, or for any other reason.

VIII. CONTACT INFORMATION
To answer questions about the research or if you sustain a research related injury contact the following:
• During the Day: Dr. Josephine Ridley at 216-791-3800 x5730 or Dr. James Overholser at 216-368-2686
• After Hours: Call the VA Medical Center operator at (216) 791-3800 then dial 0 and have Dr. Josephine Ridley paged or Dr. James Overholser at 216-368-2852

For answers to questions about rights as a research participant or to voice a concern or complaint contact the following:
• The Research Administrative Officer at (216) 791-3800 ext. 4657
• The LSCDVAMC Patient Representative at (216) 791-3800 ext. 4026

If you wish to speak with someone other than study staff to provide input concerning the research process, check whether a study is being conducted at the LSCDVAMC, and if study staff are permitted to represent the study contact:
• The LSCDVAMC Institutional Review Board Office at (216) 791-3800 ext. 4658

RESEARCH SUBJECTS’ RIGHTS: I have read or have had read to me all of the preceding information.

Dr./Mr./Ms. ___________________________ has explained the study to me and answered all of my questions. I have been told of the risks or discomforts and possible benefits of the study. I have been told of other choices of treatment available to me. I understand that I do not have to take part in this study, and my refusal to participate will involve no penalty or loss of rights to which I am entitled. I may withdraw from this study at any time without penalty or loss of VA or other benefits to which I am entitled. The results of this study may be published, but I will not be identified in publications by name, photograph, or other identifiers. My records, including my name and results of my participation, may be revealed as required by laws and regulations of state and federal agencies.

I understand my rights as a subject, and I voluntarily consent to participate in this study. I understand what the study is about and how and why it is being done. I will receive a
signed consent form or a photocopy of it. I understand that in signing this consent form I do not waive my legal rights nor release the LSCDVAMC from liability for negligence.

Subject’s Signature___________________________________________ Date   __ / __

Signature of Subject’s Representative ____________________________ Date   __ / __
(if subject not competent) print name___________________________

Signature of Person Obtaining Consent___________________________ Date   __ / __
Appendix E

Age: _____________

Gender: 0=male 1=female 2=transgender

Race: 1=White 2=Asian 3=Black 4=Hispanic 5=Other___________

Are you employed: 1=Full-time 2=Part-time 3=Unemployed 4=Other___________

Occupation: ____________________________________________________________

Marital Status: 1=Single, never been married 2=Married, first marriage length of marriage (years): _______
3=Married, remarried length of marriage (years): _______
4=Separated
5=Divorced how long divorced? (years): _______
6=Widowed
7=Coha
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