

WHO CARES? SOCIAL SUPPORT AND SOCIAL NETWORK IN DEPRESSION

by

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Abstract

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Individuals with lowered social support experience higher levels of depressive symptomology, longer symptom duration, and increased risk of recurrent depressive episodes. Current measures of social support often focus on the person's subjective feelings of support from friends and family. Subjective reports can lead to an underreporting of confidants. Social networking theories have focused on creating objective ways of measuring a person's confidants and the effect confidants have on a person's functioning. The present study assessed the differences in reporting between social network and social support measures. Results indicated that patients were less consistent in their reporting of individuals between social support and social network as depression severity increased. Post hoc analyses revealed a subset of depressed patients with non-reciprocal social supports. Depressed patients who listed non-reciprocal supports had significantly longer symptom duration and severity than depressed patients not including non-reciprocal supports.

Problems with social functioning are a primary factor in the diagnosis and treatment of many psychological disorders (Marroquín, 2011). Deficits in social relationships with families, friends, and colleagues can occur in association with any number of disorders, including mood disorders (Ibarra-Rovillard & Kuiper, 2011). Often individuals with impairments in social functioning come to therapy partially with hopes of improving relationships with others and gaining social skills (Flynn, Kecmanovic, & Alloy, 2010). Interpersonal problems are therefore some of the most important issues dealt with concerning the development and treatment of psychological disorders. Identifying the social functioning issues that can contribute to worsened psychopathology is a critical piece of a clinician's work with clients.

Social functioning can be conceptualized in a number of ways, but two primary components include perceived social support and the social network (Zhu, Woo, Porter, & Brzezinski, 2013). Perceived social support has been more widely researched than social networks, as the modern construct has existed for several decades. Definitions of social support vary in the literature with researchers focusing on different "attributes" of social support such as being cared for and loved, recognition and respect from others, and membership in a variety of close groups of people (Cobb, 1976). In more general terms, social support can be best understood as a qualitative construct that refers to the perceived meanings and expressed value of social interactions and relationships in an individual's life (Lin, Simeone, Ensel, & Kuo, 1979).

The social network is a slightly more modern concept that grew out of the need for a more quantitative way of measuring aspects of social functioning (Bastiampillai, Allison, & Chan, 2013). Social network theories largely focus on the difficulties in

quantifying a person's reports of personal feelings of love and acceptance from others. As a result, social network definitions largely include concepts such as frequency of interaction, reciprocity of relationships, and density (extent to which the person can use and contact the people around him or her) (Lin & Dean, Alfred, 1986). By making the focus of social networking more objective, researchers hoped to overcome the large amount of bias seen in individuals' reports of social support, especially in individuals with psychological disorders.

Social Support and Depression

Insufficient social support plays a substantial role in depressive symptomology. Brown and Harris's (1978) seminal work focused on the interpersonal factors that contribute to depressive symptoms. Depressed mothers were often from working class families where the family required both parents to work. As a result, mothers were more likely to become depressed due to feelings of inadequacy and failure as parents (Harris & Brown, 1978).

Coyne's (1976) interactional theory of depression also focuses on how a person's behavior can impact how others perceive them. Individuals who are mildly depressed may engage in behaviors that elicit rejecting behaviors from their others. As a result, people may feel that they are lacking in social support due to their own behaviors. The likelihood of rejecting behaviors from others is increased when depression occurs for long periods of time (Coyne, 1976). As individuals experience more rejecting behaviors, the tendency to withdraw from others can become stronger than it would be in a person who had only been depressed for several weeks (Oppenheimer, Technow, Hankin, Young, & Abela, 2012).

Individuals with depression are likely to engage in excessive reassurance seeking (Oppenheimer et al., 2012) where they spend an excessive amount of time asking others to reaffirm their behaviors, thoughts, and feelings. When these needs are not fulfilled to the satisfaction of the depressed individual, they are more likely to perceive a lack of social support, even when it does exist. Particularly in cases of recurring depressive disorders, there is a strong relationship between greater perceived social support and decreased symptom chronicity. When depression occurs later in adulthood, individuals are more likely to experience severe symptomatology if they perceive weak social support (Flynn et al., 2010). In addition, individuals without close confidants in their social support system demonstrate higher rates of anxiety and depression than those with confidants (Joiner, 1999).

Individuals with depression often feel that they do not have sufficient social support or that they lack social support all together. Individuals with depression are more likely to experience feelings of isolation and rejection (Pang, Hong, Zhao, & Yin, 2011). Furthermore, depression has been linked to a lowered sense of value within a social group. Individuals with depression are more likely to judge themselves as unnecessary to a social group than individuals with other types of mood disorders such as anxiety (Stice, Rohde, Gau, & Ochner, 2011).

Social support also has been shown to create a buffering effect against negative attributional styles. Integration in a social group often increases the likelihood that a person will discuss struggles and stressful events with other people (Lin et al., 1979). The tendency to share stressful events and discuss possible solutions produces a greater chance that the individual will receive help in resolving the stress in a healthy, productive

manner (Ensel & Lin, 1991). Individuals with strong social support also tend to be less likely to internalize negative events (Joiner, Wingate, & Otamendi, 2005). Social support appears to be particularly helpful in combating the lowered self-worth commonly associated with hopelessness and depression.

Maintaining a social support system during depressive episodes can be extremely difficult, especially for individuals with recurrent episodes. Individuals with recurrent depressive episodes often find themselves withdrawing from friends and family due to their lowered self-worth and introverted tendencies (Smith & Ruston, 2013). By withdrawing from social groups, individuals with depression can become isolated from positive interactions and support that would assist in mitigating negative cognitions (Pfeiffer, Heisler, Piette, Rogers, & Valenstein, 2011).

Individuals with depression often exhibit a number of behaviors that can make it more difficult to maintain strong social support. Negative self-statements and reassurance seeking can lead to a decrease in a person's willingness to participate in social activities, as well as others' willingness to continue associating with the depressed person (Haefel, Voelz, & Joiner, 2007). Many people experience feelings of irritation and resentment towards depressed individuals when the symptoms are especially long-lasting or severe (Tse, Rochelle, & Cheung, 2011). The combination of lowered self-worth and increased levels of frustration on both sides of a social system can make it feel impossible for clients to maintain the necessary supports to cope with depression (Katerndahl, Burge, Ferrer, Becho, & Wood, 2013).

Many individuals experience serious marital problems during depressive episodes. When depression continues over longer periods of time, marital discord

increases dramatically in many cases. In cases where individuals are experiencing negative affect and low self-worth due to depression, the loss of spousal support can be especially devastating (Choenarom, Williams, & Hagerty, 2005). While friends and nonfamily confidants are important to the formation of a strong social network, individuals lacking the support of a spouse exhibit some of the most severe depressive symptomology. In therapeutic settings, marriage therapy is often used in conjunction with individual CBT to treat depression. By using marriage therapy to strengthen the social network of individuals with depression, people experience less depressive symptoms and a greater sense of connectedness with their loved ones (Sandberg & Harper, 1999).

Theories of social support and depression focus primarily on the perceived social support a person with depression reports (Dingfelder, Jaffee, & Mandell, 2010).

Perceived social support places emphasis on the person's subjective feelings of support from family and friends, rather than on the objective nature of a person's relationship with other people. Subjective measures of social support permeate the literature on depression, but often are skewed by the level of depressive symptomology present in the client. Individuals who report higher levels of depression tend to report very low levels of social support and low satisfaction with the social support that is present (Kleinberg, Aluoja, & Vasar, 2013). As a result, many studies on depression and social support struggle to move beyond the negative bias associated with elevated depression levels.

Social Networks and Depression

One way that researchers have attempted to combat the reporting bias among individuals with depression is to focus on social networks rather than social support (Peek & Lin, 1999). Social networks refer to the people who are active participants in a

depressed client's life (Bastiampillai et al., 2013). Social networks can include co-workers, friends, relatives, spouses, or larger groups such as a church group or self-help group (e.g. Alcoholics Anonymous). Social networks are conceptualized as a primary source of support in helping individuals combat life stressors. Especially for individuals who experience numerous life stressors, a strong social network can assist in defusing the stress and allow for more effective coping styles (Ensel & Lin, 1991).

Social networks can vary in size between people, with some people requiring a much larger social network to feel socially fulfilled whereas others may feel the need for fewer individuals (Lin & Dean, Alfred, 1986). The evaluation of social networks allows for clinicians and researchers alike to examine the objective nature of a person's social system. In particular, social network measures can demonstrate the amount of time spent with friends and family, as well as the situations in which a friend or family member is more likely to be involved in the client's life (Bassett & Moore, 2013). For example, an individual may have one friend that they see movies with, but may not contact that friend in the event of a stressful life event such as the end of a relationship. Social network questions take into account the different types of relationships a person can have with friends and family, while not relying solely on the client's self-report of their emotional connection with that person.

Integrating social network questions into the therapeutic process may help to point out discrepancies in a client's thinking. Individuals who perceive very little social support from others may not be accurately reporting the people who are a part of their lives. By asking questions about what a person has done recently with others, the clinician may be able to help the client see social integration where it may have been

ignored before. In clients with depression the likelihood of simply asking questions about social networking is unlikely to completely eliminate feelings of diminished social support, even in the presence of a strong social network. The addition of social network questions may help the clinician to better understand the current social experience of the client as compared to their objective social network (Shouse, Rowe, & Mast, 2013). By examining the differences between social network and social support, the therapist will be better able use cognitive strategies with the client to help gain a more realistic picture of their social system.

Social network deficits have been linked to a number of mental health concerns, as well general life functionality. Decreased cognitive functioning has been linked to decreased social network size (Shouse et al., 2013). In particular, elderly individuals experiencing cognitive decline are more likely to lose members of their social network. Individuals who lose their ability to interact with friends and family at a high level can become withdrawn and isolated (Stoykova, Matharan, Dartigues, & Amieva, 2011) in a manner similar to individuals with depression. Often elderly individuals feel that they do not offer worthwhile conversation or companionship. As individuals become more withdrawn from friends and family, they may alienate individuals who would previously have been integral parts of a social network. As with depression, individuals experiencing cognitive decline may alienate individuals from their social network by withdrawing from social contact due to embarrassment or feelings of inadequacy.

Social network research has been especially prevalent with older adults who often experience “shearing” of their social network as they age (Shouse et al., 2013). In the cases of typical elderly adults, the limiting of social network is adaptive by limiting the

number of close individuals they relate to on a daily basis. By limiting their social contact, older adults ensure that they only remain in contact with individuals who are able to assist them in times of difficulty or distress. Younger adults, however, tend to require larger social networks. Adults also tend to perceive a lack of social networking as a failure of interpersonal functioning.

The social network also provides a concrete, less biased way of measuring social functioning and objective support in depressed individuals. Social networks are often evaluated by concrete questions such as “With whom do you get dinner?,” as compared to social support questions that might address broader constructs such as feelings of acceptance and trust in the people around them. By assessing social networks in a more objective manner, researchers can avoid some of the underreporting seen in social support literature (Lin & Dean, Alfred, 1986). Unfortunately social network assessments alone do not provide a complete picture of the social system of a depressed person. Social network measures only provide a more tangible way of measuring the social system. Little research has focused on comparing social network ratings to social support ratings in individuals with depression.

Depression and Reporting Bias

For years, substantial evidence has shown that depressed mothers are poor reporters of their children’s symptomology (Reissland, Shepherd, & Herrera, 2005). Mothers’ depression can often lead to difficulties recognizing and processing the struggles of those around them due to the severity of their own symptoms. Mothers with depression also can have difficulties reporting on their child’s day to day activities due to their own depression (De Los Reyes, Goodman, Kliewer, & Reid-Quñones, 2008).

Furthermore, a recent study has suggested that men are likely to underreport depressive symptoms on self-report measures, but women are likely to be accurate in their reporting (Sigmon et al., 2005). Individuals with depression are also much more likely to negatively interpret ambiguous stimuli, as well as present as more sensitive to emotional stimuli (Gilboa-Schechtman, Foa, Vaknin, Marom, & Hermesh, 2008).

Individuals with depression also struggle with memory performance at times. Depressive symptoms can contribute to a tendency to recall more negative events, and an inability to recall more positive events (Sato & Kawahara, 2011). The tendency to recall more negative events could contribute to a greater difficulty reporting accurately on recent social interactions as well. Individuals with depression, who often struggle with negative biases may be unable to accurately report on their perceived social supports when in the depths of a depressive episode. Rumination can contribute to even greater cognitive deficits when individuals over attend to negative information and fail to recognize positives in their lives (Joormann, Levens, & Gotlib, 2011).

Social Support Measures

Measures addressing social support and depression have focused on measuring social support as a single entity (Marroquín, 2011; Wright, King, & Rosenberg, 2014). Researchers examining social support measure degrees or amounts of social support perceived by an individual (Choenarom et al., 2005; Pang et al., 2011) but rarely account for the different aspects that come together to form the overall construct.

Satisfaction with a social support group is a commonly accepted facet of social support. Satisfaction with the people in a person's life is often cited as the most crucial element in the success of a single relationship or social network (Sarason, Levine,

Basham, & Sarason, 1983). Individuals who can identify at least one relationship that was generally positive have lower levels of anxiety and healthier lifestyles (e.g. lower depression scores, lower blood pressure). Similarly, individuals who report lower levels of satisfaction in relationships have lower levels of self-worth and report feeling “used” or “not respected” (Sandberg & Harper, 1999). Levels of satisfaction are also commonly measured in client-patient relationships in establishing the quality of therapeutic alliance. In cases where the client’s satisfaction is high there is an increased likelihood of treatment compliance and openness in therapy (Saunders, 2000).

The amount of acceptance a person feels within from peers is also important in conceptualizing a positive social environment (Yang et al., 2010). When a person does not feel comfortable with the individuals in their social network they can feel isolated and unwanted even in the presence of others. While a person may be able to list a substantial number of friends and colleague, the person may not have a reciprocal, positive relationship with those individuals. As a result, a person may find himself in a social group that does not actually benefit him in any ways, but rather perpetuates feelings of self-doubt or unworthiness.

Little is known about the impact the separate aspects of social support have on overall perceived support. When examining the varying relationships between depression and social support seen between genders, ethnicities, and other groups such as veterans, individual aspects become increasingly relevant (Flynn et al., 2010). Research should begin looking beyond the overall construct of social support and examine how the quantity, types, and perceived quality of people in a support system individually and jointly impact the overall perception of one’s social support system. From a clinical

perspective, treatment planning and interventions for social support could be improved by a more developed understanding of the relationships between depression, support system size, and individual satisfaction with that system.

The Social Support Questionnaire (SSQ) (Sarason et al., 1987) has been shown to be useful in measuring various dimensions of social support. By utilizing a free response style to evaluate the construction of social support systems, the SSQ allows for a more systematic analysis of the quantity and satisfaction level of social supports (Sarason et al., 1987). Many of the studies using the SSQ (Bal, Crombez, Oost, & Debourdeaudhuij, 2003; Haefl et al., 2007) examine how different types of social support structures impact overall efficacy of social support groups. Women often tend to have more social supports with greater satisfaction levels, whereas men indicate fewer social supports and varying levels of satisfaction with these supports (Cotton, Cunningham, & Antill, 1993). The inclusion of both friends and family is also important in an effective social support system (Stokes, 1983).

The SSQ focuses specifically on a person's perception of the social support system. The focus on perceived quality separates it from the numerous other measures of social support. By underling the importance of understanding how a person conceptualizes the social support network, the researcher can better establish the mechanisms that form a positive social network (Haefl et al., 2007). The SSQ has been used in several studies seeking to evaluate dimensions of social support such as number of individuals in a social group (Panayiotou & Karekla, 2013) and feelings of acceptance in a group (Katerndahl et al., 2013). The broader construct of social support can be best

understood when broken down into the component parts that define a functional and supportive social system.

Social Network Measures

Current measures of social networks are limited at best. Often social network measures are included only as an accompaniment to social support measures (Bastiampillai et al., 2013). Even more commonly, measures developed to evaluate social support are utilized in studies reporting results on social networks (Zhu et al., 2013). Measures of social support including the SSQ-SF sometimes included questions relating to social networks, but later removed them in favor of more subjective questions about perceived social support (Sarason et al., 1987).

The original rationale for the focus on perceived support was that the presence of social support was less important than understanding how a person feels about the social support (Sarason et al., 1987). While the use of subjective questions taps into the client's personal experience of social support, ignoring objective measures of social networking biases the way in which a person's world is conceived. Depressed individuals tend to overly attend to negative stimuli, while ignoring more positive information (Käse et al., 2013). Furthermore, individuals with depression are more likely to interpret ambiguous stimuli negatively (Joiner et al., 2002). For example, an individual with depression is more likely to interpret an ambiguous event such as a person not replying to a comment they made as a reflection of that person's dislike or disdain with them, rather than as a neutral event where the person may not have heard them. Negative attributional style can contribute to a lack of accurate reporting in any number of areas, especially in a

therapeutic setting where the therapist is relying almost entirely on the client's own reporting of events.

Due to under-reporting of social network size in depressed clients, a therapist may be less aware of the supports that are available in a person's life if only perceived support is measured. Individuals responding only to social support measures are more likely to feel unsupported, unwanted, and alone. The goal of adding social networking measures to a therapist's repertoire is to decrease the salience of this response bias, where objective, measureable questions are asked that are less susceptible to the interpretation of the client. Furthermore, understanding the nature of a social network allows for a greater chance of recognizing places where a client's cognitions are impeding their ability to fully appreciate the social network already present.

Given the complicated nature of social functioning's relationship to depression, it is crucial to tease apart the specific mechanisms at work in creating an effective level of social support and social networking. By utilizing reliable and valid measures of social support and social networking, it will be possible to better quantify the specific factors contributing to good social functioning in individuals with depression. With information regarding these specific factors, researchers and clinicians alike may be able to better understand and target the social deficits contributing to increased depressive symptomology. In addition, the use of social networking measures may provide clinicians with the ability to see past the cognitive biases of depressed clients. By allowing for a more quantitative understanding of a client's social system, the therapist may be better able to implement treatment plans that utilize the full resources of a client.

Specific Goals and Hypotheses

Individuals with depression often struggle to provide reports of their interpersonal functioning. The cognitive biases that characterize depression such as a negative attributional style can make it difficult for both researchers and clinicians to achieve a complete understanding of a person's social system. Perceived social support measures provide insight into how depressed individuals understand their social environment, and may also provide some information about the actual people they rely on for support (Wright et al., 2014). Unfortunately, few psychologists have moved beyond the client's own perception of their environment. In order to best understand the true nature of depressed individuals' social environment, more objective measures must be used to evaluate social functioning beyond their own biases.

The current study evaluated the accuracy and consistency of depressed individuals' reports of social support and social network. Furthermore, the study sought to provide insight into the mechanisms that can lead to a decrease in social network including the duration and severity of depressive symptomology.

Hypotheses:

1. The level of agreement in the number of confidants reported between a social support measure and a social network measure will be significantly lower in individuals with higher levels of depression, even when controlling for marital status and living situation.
2. Individuals who have experienced depression for extended periods of time (more than one month) will have significantly smaller social networks than individuals with shorter symptom duration, even when controlling for marital status, living situation, and depression severity.

3. Discrepancies between reports of perceived social support and social network will be significantly higher in depressed individuals with higher levels of depressive symptomology.

Method

Participants

The sample included 75 adult psychology patients at a Midwestern VA facility. For the purposes of this study, all participants met DSM-IV criteria for Major Depressive Disorder (single episode or recurrent) based upon the SCID-IV at the time of assessment. Comorbid diagnoses were expected in this population and observed in 64.6%, and therefore participants were not excluded based on the presence of multiple diagnoses at the time of assessment PTSD (18.4%), panic disorder (20.0%) and substance abuse (26.2%) were the secondary diagnoses given the participant population. Participants were excluded from the study if they meet criteria for bipolar or psychotic disorders.

Measures

Structured Clinical Interview for DSM-IV (SCID-IV: First et al., 1995) (See Appendix D for diagnosis summary form) is a widely-accepted, structured diagnostic interview used to evaluate the presence of psychiatric disorders based on DSM-IV criteria. Because a revised SCID has not been released to account for the new diagnostic criteria in the DSM-V, the study focused only on DSM-IV criteria. The SCID-IV has been shown to have very high test-retest reliability of between 0.84 and 1.00 for Axis I disorders (Schneider et al., 2004). Kappa values for the SCID-IV range between .60 and .81. Kappa values for the diagnosis of major depression range from .66 to .70 (Lobbestael et al., 2011). In the present study, the SCID-IV was administered by graduate students

trained in both diagnostic and structured interviewing procedures. Training included a graduate level course in DSM-IV diagnosis, viewing the SCID-IV training tape, shadowing an approved interviewer to view proper administration techniques and a subsequent training and observation period in order to ensure standardized SCID-IV administrations. The initial assessment began with broad screening questions in order to assess for the presence of bipolar disorder or psychosis. After these diagnoses had been ruled out, participants were interviewed using the depression section of the SCID-IV. Diagnoses of Major Depressive Disorder were given based upon the individual's responses to this section. All diagnoses were based on DSM-IV criteria.

Social Support Questionnaire-Short Form (SSQ-SF: Sarason, Sarason, Shearin, & Pierce, 1987) (See Appendix A) was used to measure how much participants feel they are cared for and supported by others, as well as their satisfaction with those people. The SSQ-SF assesses social support in two dimensions: number of supports (how many people they feel support them in areas of their life) and satisfaction with support (how happy they are with the degree of social support they have in a given area). The SSQ-SF is derived from the original Social Support (Sarason et al., 1983), which included 27 items with an identical structure to the SSQ-SF. The SSQ-SF was developed using factor analysis (Sarason et al., 1987) to determine the questions most necessary to tap into the two measured dimensions of social support. The results (Sarason et al., 1987) led to the development of the current 12-item measure. In six situations, participants are asked to report up to nine people that could be counted on to provide support (number) and then rate their satisfaction with the entire group (satisfaction) on a scale from 1 (very dissatisfied) to 6 (very satisfied). Scores were tabulated by summing the number of

unique people listed across all six questions with a range of 0 people to 54 people, with higher numbers indicating a larger group of people within the person's social support system. Satisfaction scores were determined by summing the satisfaction ratings (with a range from 6-36) where higher scores indicate a higher level of perceived social support. Currently there are not any accepted norms for either number of confidants or level of satisfaction using the SSQ-SF. Good internal consistency for both number reported and satisfaction levels has been demonstrated with coefficient alphas between 0.90 and 0.93 (Pan et al., 2012; Panayiotou & Karekla, 2013). The SSQ-SF has been shown to be a valid measure of assessing perceived social support with high construct validity of between .78 and .86 (Pan et al., 2012). The construct validity for the SSQ-SF is similar to the original SSQ ($r = .96$) (Sarason et al., 1983). The SSQ-SF is also negatively correlated with measures of depression (Panayiotou & Karekla, 2013) and loneliness indicating a good level of concurrent validity. The measure currently does not have any empirically validated subscales.

Social Network Questions (SNQ: Adapted from Lin & Dean, Alfred, 1986) (See Appendix B) The SNQ served as a measure of the participant's social network by assessing the number and types of people included in the person's support network and the amount of time they spend with those people. The SNQ will also assess the amount of group networking that a person participates in, such as church groups or self-help groups. The scale was adapted from interview questions commonly used to assess social networking (Lin & Dean, Alfred, 1986). Interview-based assessments using similar questions have reported coefficient alphas between .70 and .81 (Dean, Lin, & Ensel, 1981)

The SNQ consists of 3 general questions that assess the size of a person's social network. The fourth question measures group networking by asking the participant to rate the number of times they have participated in a group activity on a scale of 1 (never) to 4 (weekly) in the past 6 months. The 3 primary questions are divided into four portions where the person reports the people they interact with (and their relationship to that person), the individuals they have spent time with in the past month, and the individuals they have spent time with in the past week.

The SNQ was scored by summing the scores for each person in the social network for each of the first three questions. The scoring was completed as follows: a confidant contacted in the past week was scored as a 3, a confidant contacted in the last month was scored as a 2, and a confidant was scored as a 1 if not contacted in the past month or week. The scores were tabulated in this way for each of the three primary questions and then summed across the three questions for a total score. Scores ranged from 0-54 with higher scores indicating a larger social network.

Beck Depression Inventory-II (BDI-II): Beck, Steer, & Brown, 1996) was used to measure current depressive symptomology in participants. This 21-item, self-report measure asks participants to rate their feelings on a variety of statements addressing both affective and cognitive symptoms of depression. Each statement was rated on a scale of 0 (neutral) to 3 (very severe). The BDI-II was scored by summing the responses to all 21 items resulting in an observed range from 0-63, with higher scores indicating higher levels of depressive symptomology. Retest reliability for the BDI-II is high, ranging between .89 and .93 (Beck et al., 1996) after one week. The BDI-II has high internal consistency with coefficient alphas between .90 (Steer, Clark, Kumar, & Beck, 2008) and

.95 (Beck et al., 1996). The BDI-II is also positively correlated with other measures of depression indicating a high level of construct validity (Steer, Ball, Ranieri, & Beck, 1997). High construct validity indicates that the BDI measures depression severity very well.

Procedures

Participants were recruited while receiving treatment at a VA medical center. The researchers had access to basic medical information prior to the assessment, including mental health diagnosis and relevant medical information. Participants were screened and selected based upon a primary presenting problem of depression. Many participants were in treatment at the time of participation, but treatment participation was not a requirement for the current study.

Participants were recruited from two primary sources at the VAMC. The first source of participant referral was the Psychology Day Hospital Program, where participants were engaged in a daily treatment program for various mental health concerns. Participants from the Day Hospital Program were referred by staff members at which time graduate student researchers approached the participant to ask if they were interested in participating in the study. The second source for referrals was the outpatient psychology consult lists from the VAMC. In accordance with VA procedures, participants first received postcards in the mail informing them of the study and information on how to participate (See Appendix F). Individuals who received the postcards were also contacted via phone by researchers and asked if they were interested in participating in the study. After participants indicated an interest, they were scheduled for a particular time during which the one-time assessment took place.

Upon receiving informed consent (See Appendix C) from the participants, researchers began by administering the SCID-IV. After the completion of the depression section of the SCID-IV, an abbreviated version of the rest of the interview was conducted for any additional screening questions endorsed by the participant and secondary diagnoses were noted accordingly. Researchers then asked the participant to complete a packet of questionnaires including the SSQ-SF, the BDI, and the SNQ.

Following completion of the questionnaires, participants were given a \$10 cash compensation or Walmart gift card for their time.

Data Analytic Plan

Hypothesis 1:

It was predicted that the percentage of agreement between confidants listed on the SSQ and the SNQ would be significantly lower as BDI scores increase, with the highest level of agreement present in individuals with low BDI scores.

Proposed Analyses for Hypothesis 1:

This hypothesis was tested by first coding the people listed as confidants on the SSQ as well as the people listed as members of a social network on the SNQ. A percent agreement was calculated by dividing the number of people matching across the two measures (listed on both the SSQ and SNQ) by the total number of unique people listed on the two measures combined.

The percent agreement between SSQ and SNQ ratings was used as a continuous variable to be co-varied with BDI scores across individuals. A Pearson correlation was used to assess the degree to which BDI scores are related to percent of agreement

between SSQ and SNQ entries. Cohen's (1988) standards for correlations were used as follows: .1 (small), .3 (medium), .5 (large).

Additionally, a hierarchical regression was used to further assess whether increased BDI scores contributed to lower percent agreement between the SNQ and SSQ when controlling for marital status and living situation. Marital status was coded as a dichotomous variable (married and not married). Living situation was also coded as a dichotomous variable (living alone and living with another person) (See Appendix E).

In step 1 of the regression, living situation was entered into the model to determine how much of the variance of percent agreement is accounted for by this variable. In step 2 of the regression, relationship status was entered into the model to determine how much variance of percent agreement is accounted for by this variable. In the final step of the model, BDI scores was added to the model. BDI score was considered a significant predictor of the percentage of agreement between SNQ and SSQ if the R^2 increase is significant ($p < .05$). An n of approximately 61 was needed to obtain statistical power at the recommended .80 level.

Hypothesis 2:

It was predicted that as the duration of depressive symptomology (in weeks) increased, the number of individuals in the social network (SNQ) would decrease, with the smallest social networks present in individuals with the longest symptom duration, when controlling for depression severity (BDI scores), marital status, and living situation.

Proposed Analyses for Hypothesis 2:

The initial data analytic plan included conducting a hierarchical multiple regression analysis in order to evaluate the strength of the relationship between

depression duration and the number of individuals in the social network when controlling for depression severity, marital status, and living situation. However, Pearson correlations examining the association between depression duration and number of individuals in the social network did not support the further use of statistical analyses, including multiple regressions. Furthermore, due to a higher than expected amount of missing data regarding depression durations the statistical power for the hierarchical regression was too low to have provided interpretable results.

Hypothesis 3:

It was predicted that as BDI scores increase, the discrepancy between total SSQ scores and total SNQ scores would increase with the greatest discrepancies present in individuals with very elevated BDI scores.

Proposed Analyses for Hypothesis 3:

Discrepancies between total perceived social support ratings and social network ratings were calculated by using z scores for both social support ratings and social network ratings. The z scores were co-varied with depression severity (BDI scores). A Pearson correlation was used to assess the degree to which depression severity (BDI) was related to the difference between total social support scores (SSQ) and total social network scores (SNQ). Cohen's (1988) standards for correlations will be used as follows: .1 (small), .3 (medium), .5 (large).

Additionally, a hierarchical regression was used to further assess whether increased BDI scores contributed to larger discrepancies between the SNQ and SSQ total scores when controlling for marital status and living situation. In step 1 of the regression, living situation was entered into the model to determine how much of the difference score

variance was accounted for by this variable. In step 2 of the regression, relationship status was entered into the model to determine how much of the difference score variance was accounted for by that variable. In the final step of the model, BDI scores were added to the model. BDI score was considered a significant predictor of the difference between SNQ and SSQ if the R^2 increase is significant ($p < .05$). An n of approximately 68 was needed to obtain statistical power at the recommended .80 level.

Results

Participants included 75 veterans with Major Depressive Disorder. Following data collection, nine patients were not able to be included in analyses. Five of these participants were not currently experiencing depressive symptoms. An additional two participants were excluded due to unscorable SSQ scales. The final two participants were excluded due to evidence of psychosis upon completion of the SCID. As a result, a total of 66 participants were available to be included in analyses. Preliminary demographic information was analyzed (see Table 1), as well as preliminary correlations evaluating relationships between the SSQ, SNQ, and BDI scales (see Table 2). Cases of missing demographic and clinical information including depression duration, living situation, and relationship status were excluded pairwise from analyses only when the missing data was necessary for analysis. The additional missing demographic and clinical data led to some analyses having less than the total 66 participants included in analyses. A larger than expected amount of missing data resulted in some analyses being underpowered. Observed power statistics and specific reasons for missing data are reported for each underpowered analysis.

Preliminary Analyses

In order to examine how social network size related to psychiatric history and general demographic factors patients were divided into 3 groups (1 person in social network, 2-3 people, and 4+ people) for preliminary analyses. Seventeen patients (25.7%) listed 1 person, 26 patients (39.5%) listed 2-3 people, and 23 patients (34.8%) listed 4 or more people in their social network based upon responses to the Social Network Questionnaire (SNQ).

Patients presented with a number of comorbid diagnoses including PTSD (18.4%), Substance Abuse (26.2%), and Panic Disorder (20.0%). The remaining 24 (35.4%) of patients did not meet criteria for any comorbid diagnosis.

A one-way ANOVA was performed to examine group differences in age at the time of evaluation based upon number of people in patients' social networks (1 person, 2-3 people, 4+ people). No significant group differences in age were observed across people with different levels of social network size ($F(3, 65)=0.95$, ns).

Chi square analyses were performed to examine group differences in demographic factors (see Table 3) and past psychiatric history (see Table 4). Patients with 4 or more individuals in their social network (30.4%) are significantly less likely to be unemployed than those with 0-1 person or 2-3 people ($\chi^2(1) = 10.19$, $p < .01$). There were not any other significant differences between groups in terms of gender, ethnicity, relationship status, living situation, number of comorbid diagnoses, prior psychiatric hospitalization, or past suicide attempts.

A second one-way ANOVA was performed to examine group differences in depression duration (in weeks) at the time of evaluation based upon number of people in patients' social network (1 person, 2-3 people, 4+ people). Significant group differences

were observed in depression duration (in weeks) between social network sizes ($F(2,57)=3.13, p<.05$). Tukey post hoc analyses ($p<.05$) revealed that individuals with 4 or more people in their social network had significantly lower symptom duration than those with 1 person or 2-3 people.

Hypothesis 1 Analyses

In order to test the hypothesis that percent agreement scores between SNQ and SSQ would decrease as depression severity (BDI scores) increased, a Pearson correlation was performed. Percent agreement was calculated by dividing the number of people listed on both the SNQ and SSQ by the total number of unique people listed on both measures. For example, in a case where two people were listed on the SSQ and four people were listed on the SNQ (where two people were listed on both measures) the percent agreement would be $2/4$ or 50%. Percent agreement could not be calculated for five cases because participants did not consistently list identifying information of their social network across measures. Therefore, it was not possible to determine if the same people were referenced on both the SSQ and SNQ. Due to the lack of sufficient information for five cases the total n for the analyses was 61.

BDI scores were significantly correlated with the percent of agreement ($M=.68$; $SD=.36$; Range: 0.00-1.00; skewness = $-.62$) of the SNQ and SSQ ($r(61)=-.35, p<.01$). Results were consistent with the original hypothesis, indicating that lower agreement scores between the SNQ and SSQ were associated with more severe depressive symptomology (higher BDI scores). The tendency for individuals with more severe depressive symptoms to be less consistent in reporting their social system demonstrates the negative impact depression can have on self-reporting abilities.

A hierarchical regression was then performed to further assess the nature of the relationship between percent agreement (SSQ and SNQ) and depression severity (BDI scores) when controlling for both relationship status and living situation (see Table 5). Individuals currently in a committed romantic relationship (married, engaged, or cohabitating) were coded with a 1, while those not in a committed relationship were coded with a 0. Individuals living alone were coded with a 0 and those living with another person were coded with a 1. Relationship status was entered at the first step, explaining <1% of the variance of percent agreement between SNQ and SSQ (R^2 change=.005). Living situation was entered at the second step, explaining 1.6% of the variance of percent agreement (R^2 change=.021, increase R^2 =.016). Accounting for depression severity in the final step contributed 11.8% of the variance (R^2 change=.139, increase R^2 =.118) in percent agreement between SNQ and SSQ after living situation and relationship status in depressed clients (F change (3,59) = 7.64, p < .01).

Hypothesis 2 Analyses

In order to test the hypothesis that as depression duration (in weeks) increased the number of people in the social network would decrease, a Pearson correlation was performed. Seven cases were excluded from the correlation due to missing depression duration ratings, resulting in a total n of 59. Results did not support the hypothesis, indicating that there was not a significant correlation between depression duration and number of people in the social network ($r(59)$ = .09, ns). Given the nonsignificant findings for the Pearson correlation, additional analyses including regressions were not performed.

Hypothesis 3 Analyses

In order to test the hypothesis that as depression severity (BDI scores) increased the discrepancy between SNQ and SSQ scores would also increase, both SNQ and SSQ total scores were converted to z scores. The z scores for total SNQ were subtracted from the z scores for total SSQ in order to create a discrepancy variable that accounted for the difference in reporting between the two measures. The discrepancy variable from SNQ and SSQ was used as the dependent variable in the following analyses.

A Pearson correlation was performed to examine the relationship between depression severity (BDI scores) and the discrepancy between total perceived social support and social network ratings. Results indicated that there was not a significant correlation between depression severity and the discrepancy variable ($r(65) = -.04$, ns).

A hierarchical regression was performed to determine the strength of the relationship between depression severity (BDI scores) and the discrepancy between SSQ and SNQ scores when controlling for living situation and relationship status (see Table 6). Living situation explained 3.0% of the variance of the discrepancy between SNQ and SSQ total scores ($R^2 = .029$, adjusted $R^2 = .029$). Less than one percent of the variance of the discrepancy between SNQ and SSQ total scores ($R^2 = .041$, increase $R^2 = .009$) was explained by relationship status when added to the model in step 2. Depression severity did not contribute a statistically significant amount of the total variance ($R^2 = .039$, increase $R^2 = .001$) in the discrepancy between SNQ and SSQ scores among depressed patients (F change (3,65) = 0.06, ns).

Post Hoc Analyses

In order to further examine the relationships between social network and depression, several post hoc analyses were completed. During the data coding process, it

was noted that many participants did not list anyone on the third question on the SNQ, specifically addressing the presence of a confidant. Participant answers to the third question were coded separately to divide participants into two groups where a 0 was used to represent no confidants and 1 was used to represent at least one confidant on the SNQ. The two groupings were then compared on a number of different factors including depression severity (BDI scores) and depression duration (in weeks) using an independent samples t-test. Individuals who did not report having contact with a confidant in the past month had significantly longer symptom duration ($M=339.43$, $SD=372.17$) than individuals who made contact with a confidant ($M=89.42$, $SD=154.94$) ($t(57)=3.57$, $p<.01$). Individuals who did not report having contact with a confidant in the past month also had significantly higher depression severity ($M=31.96$, $SD=10.89$) than those who had made contact in the past month ($M=25.50$, $SD=10.57$) ($t(64)=2.39$, $p<.01$).

Several individuals in a committed relationship did not report significant others as a confidant on the SNQ. In order to assess the impact the lack of partner support had on depression, participants in committed relationships were broken into a separate data set consisting of 23 patients. Eight of these 23 patients did not list a partner as a confidant on the SNQ. Independent samples t tests examining depression severity, suicide history, and depression duration showed no significant differences between patients reporting significant others as a confidant and patients not reporting a significant other as a confidant. The results of the analyses indicate that in the current sample, the lack of partner support did not have a dramatic impact on overall depressive symptomology.

A total of 11 patients reported some type of non-reciprocal support on the SNQ. Non-reciprocal supports were coded when a patient listed a person under the age of 10-

years-old or a non-human entity as a source of social support. Nine patients listed grandchildren who were under the age of 10-years-old as confidant in question 3 of the SNQ and an additional two patients listed an animal as confidant in question 3 of the SNQ. An independent samples t-test comparing patients listing no confidants and patients listing non-reciprocal supports found there were not significant differences between the two groups in terms of depression duration, depression severity (BDI scores) or age. For all future analyses, patients listing nonreciprocal supports were included with patients listing no confidants. The resulting split in the data showed 33 patients with either no confidants or a non-reciprocal support and 33 patients with at least one confidant.

An independent samples t-test showed that patients without a confidant or reporting a non-reciprocal support ($M=281.86$, $SD=350.51$) had significantly longer symptom duration than patients with at least one confidant ($M=95.07$, $SD=167.13$) ($t(57)=2.63$, $p<.01$). Due to the lack of recorded symptom duration for seven patients the total n for the t-test was 59. Another independent samples t-test showed that patients without a confidant or reporting a non-reciprocal support ($M=31.39$, $SD=11.26$) had significantly higher depression severity (BDI scores) than patients with at least one confidant ($M=24.70$, $SD=9.98$) ($t(64)=2.57$, $p<.01$). Both t-tests demonstrate that non-reciprocal supports function in similar ways to a complete lack of confidants in patients experiencing depression (see Table 7).

Discussion

Patients with BDI scores in the moderate or severe range were significantly more likely to report fewer individuals as social supports (SSQ) than individuals in their social network (SNQ) than patients with mild depression (low BDI scores). The tendency for

individuals to be inconsistent in their reporting supports the hypothesis that patients with severe depression are likely to feel isolated and unsupported, while still having individuals with whom they felt socially connected. Feelings of isolation are especially common in individuals with high levels of depression symptomology (Ibarra-Rovillard & Kuiper, 2011). Because patients in the present study reported having larger social networks on the SNQ than social support on the SSQ, there may be an opportunity for clinicians to utilize social network measures to assist in therapeutic interventions. In particular, focusing on the relationship between the people a depressed client spends time with as compared to the people they report as social supports may be a useful cognitive strategy for improving sense of belonging. The use of both social support measures and social network measures with clients may provide a concrete method of showing this trend to patients during therapy.

In the present study, depressed patients with longer symptom duration had small social networks. Although many patients may have moderate or large social networks when their depression begins, over time the tendency to withdraw and feel isolated contributes to an actual diminishing of social network. Supportive individuals are likely to feel ineffective and withdraw from the depressed patient when symptoms continue for extended periods of time as compared to shorter depressive episodes (Haefffel et al., 2007). When alienation occurs, patients may find themselves without the social supports they need to help them when depressive symptoms extend for many years.

There was a not a statistically significant difference in the number of people in a patient's social network based upon the duration of their depressive symptomology. Social network size prior to the patients' depression was not measured, so it is difficult to

know if the results are evidence of unchanging social network size over time or if it was simply the lack of a pre-depression baseline. Very few individuals (3.0%) reported a complete lack of social networking. The absence of individuals reporting a complete lack of support could have also limited our findings due to a disproportionate number of individuals with large social networks.

There was not a statistically significant difference in total scores between the SNQ and SSQ based upon depression severity. Because individuals did not seem to be inconsistent in their reporting of total social support and total social network, there could be an alternative explanation for our findings. Several studies (Constantino et al., 2008; Kase et al., 2013) note the tendency for individuals with depression to withdraw from their friends and family during depressive episodes. The present findings support the notion that individuals who are depressed do not engage in activities with their social network during depressive episodes regardless of the number of people supporting them. A review of cases specifically examining the social network size of depressed clients showed that often individuals would list people they could spend time with, but indicated that they chose to not engage with these people during their depressive episodes. A large percentage of patients listed 4-5 people as part of their social network, while only listing 1-2 as social supports. When asked how often they spent time with individuals in their social network, however, they would list only one person.

A complete lack of contact with a confidant was related to longer symptom duration and more severe depressive symptoms as compared to patients who reported at least one confidant. Patients with depression are not spending time with people they consider confidants even when those individuals are available. Patients with longer

symptom duration have smaller social networks. Unfortunately, patients with longer symptom duration are also less likely to utilize the confidants available to them.

Patients with depression lasting for many years often withdraw from friends and family due to fears of being a burden (Joiner et al., 2002). In particular, feelings that friends and family will not want to hear about their problems increase the likelihood that depressed patients will not engage with others (Stice et al., 2011). As a result, patients isolate themselves from individuals who could help them and respond by withdrawing from friends and family. The results of the current study show a tendency to withdraw from social network overall, as well as from close family and friends. The tendency to withdraw from confidants is extremely disconcerting as often family and friends are the most likely to be willing to offer support to depressed clients in crisis (Davidson, Wingate, Grant, Judah, & Mills, 2011). Interventions focused on examining patients' reasons for disengaging from confidants, as well as promoting healthy social interactions and social support are especially important for individuals with longer term, more severe depression.

Spousal support is a crucial part of social connectedness for patients who are involved in a committed relationship (Don & Mickelson, 2012). Patients experience longer symptom duration and more severe symptoms when in a nonsupportive relationship as compared to those who indicate a partner as a confidant (Choenarom et al., 2005). In examining how confidants were utilized by depressed patients in the current study, a lack of spousal support did not have a significant impact on depression severity beyond that of any other confidant. An explanation for the findings could be that patients who did not list a spouse as a confidant had poor social connectedness overall. In cases

where patients had poor social connectedness, the lack of spousal support could be an artifact of a larger problem with social networking. In the present study many of those individuals who did not report spousal support already had very limited social connectedness. The alienation effects and withdrawal from their social system may have simply extended to their spouses along with many other friends and family.

The present study identified a group of eleven patients reporting young children (<10 years old) and animals as sources of social support. Typically, social systems are comprised of a varied group of individuals all of whom provide some sort of support or connectedness for the individual (Lin & Dean, Alfred, 1986). Most often, adult social systems include adults and children, where the children play a less direct role in supporting the adult. In the present study, individuals listing non-reciprocal supports indicated that the children or animal were an important part of their social system. Non-reciprocal supports can best be described as a social support identified by the client who is unable to provide emotional support due to age, cognitive functioning or some other factor (Ingersoll-Dayton & Antonucci, 1988). Social supports are also considered non-reciprocal if they are non-human. The term “nonreciprocal support” originated in gerontology literature to specifically refer to the relationship between a long-term caregiver (such as an adult child) and a geriatric patient. Individuals providing care reported feeling less fulfilled and isolated as a result of providing such intense support without receiving a comparable amount of support in return (Ingersoll-Dayton & Antonucci, 1988). Relationships with young children are often nonreciprocal by nature due to the child’s relative inability to provide reciprocity for the amount of care and support they receive. As a result, studies of social support in parents and caregivers focus

on sources of social support from other adults (Kim & Kim, 2009). Similarly, parents and caregivers do not report their children or grandchildren as a confidant in most studies. Due to the relatively rare nature of non-reciprocal supports among adult populations there is limited literature focusing on the ways in which non-reciprocal supports impact an adult's mental health.

In the present study, individuals reporting non-reciprocal supports were similar to individuals not reporting any confidants. When the two groups were collapsed together, analyses revealed that individuals without a confidant/reporting a non-reciprocal support showed longer symptom duration and more severe depressive symptoms compared to individuals with at least one confidant. The results indicate that non-reciprocal supports do not provide a suitable level of social connectedness to minimize symptoms of depression. Instead individuals with non-reciprocal supports appear to experience very little benefit from these types of confidants. A larger sample of patients with non-reciprocal supports would be helpful in assessing the specific impact nontraditional social supports have on depression severity, symptom duration, and suicide risk. Future research might also benefit from exploring how individuals conceptualize children as social supports and how they are utilized in a social system as compared to an adult.

The results of the current study should be considered in the context of several limitations. First, due to the low number of patients in the study, the observed power for analyses was insufficient to find significant effects between groups. In particular, the lack of consistent reporting of depression duration made it difficult to find meaningful effects regarding depression duration and social network size. A lack of sufficient power made it

difficult to test smaller group differences such as gender and relationship status, as well. Despite the diminished power in the current study there were several significant findings.

Measuring social support and social networking presented some difficulties for the current study. Despite using an empirically validated measure of social support, the SSQ still relied on patients consistently reporting members of their social network across measures. Even with procedures in place to ensure completion of measures some variance in the accuracy and completeness of responses was inevitable. As a result, it was difficult to ensure that the same people were referenced in both the SNQ and SSQ due to inconsistent reporting of names and relationships to the patient.

Although Lin and colleagues (1999) suggest that social networking can be a more objective way of measuring social connectedness among depressed clients, the measure utilized in the current study relied on self-report. Given that many of these individuals were experiencing long-term, severe depression, the reporting of social connectedness still represents a snapshot of patients' subjective feelings about their social system. Because there were not objective parties measuring their social system, the current results rely purely on the patients' perceptions of their connectedness to others.

Despite a small sample size, the clinical population used for the study allowed for the study of patients actually experiencing psychopathology. The veterans in the current study were currently experiencing major depressive episodes often lasting for far longer than the two week criteria. These patients often came from low income backgrounds where their depression and life circumstances had made it difficult for them to maintain employment and support their families. The data used for the present study provided an

opportunity to evaluate how depression impacted social functioning of actual patients receiving treatment in a mental health facility.

The measures utilized in this study allowed for a comparison of people included in a social network. Often it is not possible to examine the specific individuals a person considers a part of their social system. Despite the limitations of self-report measures, the SNQ and SSQ allowed for in-depth analyses of the types of people a patient considers a member of a social network as compared to a confidant. The current study also demonstrated the pervasiveness of limited social connectedness especially in regards to spousal support. Similarly, the current study demonstrated the dramatic impact that long-term depression can have on the size of person's social network. Patients with long-term depressive symptoms had small social networks and often did not report having even one confidant on whom they could rely.

The present study offered the opportunity to explore a subset of individuals reporting non-reciprocal supports. While the topic of non-reciprocal supports has not been widely studied in the literature at this time, there is evidence to show that nonreciprocal supports are evidence of a more pervasive deficit in social connectedness. In particular, the current study offered preliminary evidence that patients with non-reciprocal supports had higher average BDI scores as well as longer symptom duration. While the current study did not have a sufficient number of patients to explore this phenomenon more closely, the preliminary findings show a unique subset of individuals who may be of particular interest to clinicians currently working in the field. By further exploring the motivations behind having non-reciprocal supports as well as evaluating

their impact on a person's overall social functioning we may be able to provide new insight into social connectedness among depressed individuals.

Table 1 *Demographic information and history among 66 depressed patients*

	Number of patients	Range	Mean (SD)	Skewness	Kurtosis
Age	66	27-69	53.77(9.19)	.77	.69
Depression	59	2-1040	186.88(286.62)	2.14	3.00
Duration (in weeks)					
Depression	66	4-55	28.05(11.08)	.58	.03
Severity (BDI scores)					
SSQ-SF Total	65	0-31	10.04(7.74)	1.11	.03
Score					
SNQ Total Score	66	2-51	13.18(7.96)	1.86	.29
Number of	66	0-3	.80(.76)	.77	.40
Confidants					

Note. Number of confidants was measured by the 3rd item on the SNQ

Table 2

Pearson correlations among measures of social network, social support, and depression

Measure	n	Mean(SD)	Depression Duration (in weeks)	BDI Scores	SSQ- SF Total Scores	SNQ Total Scores	Number of Confidants
Depression Duration (in weeks)	59	186.88(286.62)	--				
BDI Scores	66	28.05(11.08)	.20	--			
SSQ-SF Total Score	65	10.04(7.74)	.02	-.39**	--		
SNQ Total Score	66	13.18(7.96)	-.17	-.35**	.40**	--	
Number of Confidants	66	.80(.76)	.09	-.36**	.27*	-.06	--

Note. Number of confidants was measured by the 3rd item on the SNQ--- $p < .05$, ** $p < .01$*

Table 3

Demographic information for 66 depressed patients based upon social network size

	1 Person	2-3 People	4 or More People	Statistic
N	17	26	23	
Age: Mean (SD)	52.5 (8.41)	52.32 (9.37)	56.35 (9.56)	1.37
% Male	94.1%	92.0%	86.9%	0.67
% Caucasian	47.0%	32.0%	39.1%	0.96
% In Relationship	17.6%	25.0%	26.1%	2.07
% Unemployed	70.5%	72.0%	30.4%	10.19**
% Living Alone	52.9%	32.0%	56.5%	3.33

Note. ** $p < .01$

Table 4

Psychiatric history among 66 depressed clients based on social network size

	1 Person	2-3 People	4 or More People	Statistic
N	17	26	23	
% Comorbid Diagnosis	76.5%	68.0%	52.1%	2.73
% PTSD	23.5%	16.0%	17.4%	
% Substance Abuse	23.5%	32.0%	21.7%	
% Panic Disorder	29.5%	20.0%	13.0%	
% Prior Psychiatric	52.9%	40.0%	39.1%	0.92
Hospitalization				
% Prior Suicide Attempt	52.9%	52.0%	26.1%	4.19
(lifetime)				
% Suicide Attempt (last 30	17.6%	13.6%	4.3%	1.86
days)				
Depression Duration	139.80	294.55	91.86	3.13*
(weeks): Mean (SD)	(215.14)	(378.69)	(160.67)	

Note. * $p < .05$ —all analyses are χ^2 except for depression duration

Table 5

Hierarchical Multiple Regression Analysis Examining Percent Agreement between SNQ and SSQ in Patients (N=61)

Variable	<i>B</i>	<i>SE</i> <i>B</i>	β	<i>t</i>	R^2	R^2 change	<i>F</i> change
Step 1							
Living Situation	.05	.08	.07	.54	.005	.005	0.29
Step 2							
Relationship Status	-.09	.09	-.13	-.97	.021	.016	0.93
Step 3							
Beck Depression Inventory-II	-.01	.00	-.34	-2.76**	.139	.118	7.64**

Note. ** $p < .01$

Table 6

Hierarchical Multiple Regression Analysis Examining Social Network Size in Depressed Clients (N=59)

Variable	<i>B</i>	<i>SE B</i>	β	<i>t</i>	R^2	R^2 change	<i>F</i> change
Step 1							
Living Situation	.28	.47	.08	.59	.006	.005	0.35
Step 2							
Relationship Status	-.08	.43	-.03	-.19	.007	.003	0.04
Step 3							
Beck Depression Inventory-II	-.04	.02	-.23	-1.75	.056	.054	3.05
Step 4							
Depression Duration (weeks)	.00	.00	-.06	-.45	.065	.004	0.20

Note. No significant values

Table 7

Independent Samples T-Test Comparing Non-Reciprocal Supports and Patients with 1+ Confidant on Depression Duration and Severity

	Non-reciprocal or No Confidant			1+ Confidant			95% CI for Mean Difference	t	df
	M	SD	n	M	SD	n			
Depression Duration	281.86	350.51	29	95.07	167.13	30	44.39 , 41.48	2.63 **	57
BDI Scores	31.39	11.26	33	24.70	9.98	33	1.46, 11.93	2.56 **	64

Note. ** $p < .01$.

Appendix A

SSQ-SF: The following questions ask about people in your environment who provide you with help or support. Each question has two parts. *For the first part*, list all the people you know, excluding yourself, whom you can count on for help or support in the manner described. Give the persons' initials and their relationship to you.

For the second part, circle how satisfied you are with the support you have. If you have had no support for a question, check the words "no one," but still rate your level of satisfaction.

1. Whom can you really count on to be dependable when you need help?

No one	1)	4)	7)
	2)	5)	8)
	3)	6)	9)

2. How satisfied?

6 – very Satisfied	5 – fairly satisfied	4 – a little satisfied	3 – a little dissatisfied	2 – fairly dissatisfied	1 – very dissatisfied
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3. Whom can you really count on to help you feel more relaxed when you are under pressure or tense?

No one	1)	4)	7)
	2)	5)	8)
	3)	6)	9)

4. How satisfied?

6 – very Satisfied	5 – fairly satisfied	4 – a little satisfied	3 – a little dissatisfied	2 – fairly dissatisfied	1 – very dissatisfied
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5. Who accepts you totally, including both your worst and best points?

No one	1)	4)	7)
	2)	5)	8)
	3)	6)	9)

6. How satisfied?

6 – very Satisfied	5 – fairly satisfied	4 – a little satisfied	3 – a little dissatisfied	2 – fairly dissatisfied	1 – very dissatisfied
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7. Whom can you really count on to care about you, regardless of what is happening to you?

No one	1)	4)	7)
	2)	5)	8)
	3)	6)	9)

8. How satisfied?

6 – very Satisfied	5 – fairly satisfied	4 – a little satisfied	3 – a little dissatisfied	2 – fairly dissatisfied	1 – very dissatisfied
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9. Whom can you really count on to help you feel better when you are feeling generally down-in-the dumps?

No one	1)	4)	7)
	2)	5)	8)
	3)	6)	9)

10. How satisfied?

6 – very Satisfied	5 – fairly satisfied	4 – a little satisfied	3 – a little dissatisfied	2 – fairly dissatisfied	1 – very dissatisfied
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11. Whom can you count on to console you when you are upset?

No one	1)	4)	7)
	2)	5)	8)
	3)	6)	9)

12. How satisfied?

6 – very Satisfied	5 – fairly satisfied	4 – a little satisfied	3 – a little dissatisfied	2 – fairly dissatisfied	1 – very dissatisfied
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Appendix B

Social Network Questions

Please answer the following questions. Circle the appropriate answers and fill in the blanks.

1. Is there anyone in your life with whom you like to do things, for example go to the movies, share a meal, go for a walk, play a game, etc.? **YES** **NO**

If yes, please continue. If no, skip to #2:

Who are the people with whom you do these things? List their first names and their relationship to you on each line:

A. _____ D. _____
 B. _____ E. _____
 C. _____ F. _____

Of the people listed above, whom have you spent time with in person *over the past month*?

A. No one D. _____
 B. _____ E. _____
 C. _____ F. _____

Of the people listed above, whom have you spent time with in person *over the past week*?

A. No one D. _____
 B. _____ E. _____
 C. _____ F. _____

2. Is there anyone in your life whom you can call on for help, advice, or support? **YES** **NO**

If yes, please continue. If no, skip to #3:

Who are the people you call on for help, advice, or support? These may be children, a significant other, family members, or friends. List their first names and their relationship to you on each line:

A. _____ D. _____
 B. _____ E. _____
 C. _____ F. _____

Of the people listed above, whom have you called on the phone or visited in person *over the past month*?

A. No one D. _____
 B. _____ E. _____
 C. _____ F. _____

Of the people listed above, whom have you called on the phone or visited with in person *over the past week?*

- A. No one D. _____
 B. _____ E. _____
 C. _____ F. _____

3. Is there anyone in your life with whom you can share anything and everything, including your deepest secrets and darkest moments, without any hesitations? **YES NO**

If yes, please continue. If no, skip to #4:

List their first names and their relationship to you on each line:

- A. _____ D. _____
 B. _____ E. _____
 C. _____ F. _____

Of the people listed above, whom have you confided in at some point *over the past month?*

- A. No one D. _____
 B. _____ E. _____
 C. _____ F. _____

Of the people listed above, whom have you confided in at some point *over the past week?*

- A. No one D. _____
 B. _____ E. _____
 C. _____ F. _____

4. Using the following 4-point scale, please indicate the frequency of your involvement with the following groups or organizations for any particular reason or problem during the past 6 months:

1	2	3	4
<i>Never</i>	<i>Every few months</i>	<i>Monthly</i>	<i>Weekly</i>
Church/synagogue/religious groups _____		Social, civic, fraternal groups _____	
School groups _____		Volunteer service organizations _____	
Social service agencies _____		Job training _____	
Family and children's services _____		Senior citizen centers _____	
Counseling centers/mental health clinics _____		Veteran's administration _____	
Rehabilitation services _____		Self-help groups _____	
		(ex. Alcoholics Anonymous)	

Additional details about social

activities: _____

Appendix C

**VA Department of
Veterans Affairs**

Subject Name:

Date: _____

Title of Study: Exploring Recovery from Depression

Principal Investigator: James Overholser, Ph.D.

VAMC: Cleveland (541)

Consent Version Date: May 2012

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 _____
(if subject not competent) print name _____ Date __ / __ / __

Signature of Person Obtaining Consent _____ Date __ / __ / __

Appendix D

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	Yes
No				

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

PTSD/Trauma

Current Diagnosis	Yes	No	Past Diagnosis	Yes
No				

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

Psychotic Disorder

Current Diagnosis	Yes	No	Past Diagnosis	Yes
No				

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

Substance Use Disorder

Current Diagnosis	Yes	No	Past Diagnosis	Yes
No				

_____ 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 E

Demographics Form

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=Cohabiting, living together

Number of Children (if any): _____

Do you live alone? (circle one) Yes No

If no, with whom do you live? _____

Appendix F

The Louis Stokes Cleveland VA Medical Center is inviting Veterans to participate in a research study on depression.

Veterans who are interested may contact **Danielle Raymond** at **(216) 368-5350**.

We are offering \$10 for participation.

The research team will contact you via phone to follow up on your interest in the study.

References

- Bal, S., Crombez, G., Oost, P. V., & Debourdeaudhuij, I. (2003). The role of social support in well-being and coping with self-reported stressful events in adolescents. *Child Abuse & Neglect*, 27(12), 1377–1395.
<http://doi.org/10.1016/j.chiabu.2003.06.002>
- Bassett, E., & Moore, S. (2013). Social capital and depressive symptoms: The association of psychosocial and network dimensions of social capital with depressive symptoms in Montreal, Canada. *Social Science & Medicine*, 86, 96–102.
<http://doi.org/10.1016/j.socscimed.2013.03.005>
- Bastiampillai, T., Allison, S., & Chan, S. (2013). Is depression contagious? The importance of social networks and the implications of contagion theory. *Australian and New Zealand Journal of Psychiatry*, 47(4), 299–303.
<http://doi.org/10.1177/0004867412471437>
- Beck, A., Steer, R., & Brown, G. (1996). *Manual for the Beck Depression Inventory-II*. San Antonio, TX: Psychological Corp.
- Choenarom, C., Williams, R. A., & Hagerty, B. M. (2005). The Role of Sense of Belonging and Social Support on Stress and Depression in Individuals With Depression. *Archives of Psychiatric Nursing*, 19(1), 18–29.
<http://doi.org/10.1016/j.apnu.2004.11.003>
- Cobb, S. (1976). Social support as a moderator of life stress. *Psychosomatic Medicine*, 38(5), 300–314.

- Constantino, M. J., Manber, R., Degeorge, J., McBride, C., Ravitz, P., Zuroff, D. C., ...
 Arnow, B. A. (2008). Interpersonal styles of chronically depressed outpatients.
Psychotherapy: Theory, Research, Practice, Training, 45(4), 491–506.
- Cotton, S., Cunningham, J. D., & Antill, J. K. (1993). Network structure, network support
 and the marital satisfaction of husbands and wives. *Australian Journal of
 Psychology*, 45(3), 176–181. <http://doi.org/10.1080/00049539308259136>
- Coyne, J. C. (1976). Depression and the response of others. *Journal of Abnormal
 Psychology*, 85(2), 186–193. <http://doi.org/10.1037/0021-843X.85.2.186>
- Davidson, C. L., Wingate, L. R., Grant, D. M., Judah, M. R., & Mills, A. C. (2011).
 Interpersonal suicide risk and ideation: The influence of depression and social
 anxiety. *Journal of Social and Clinical Psychology*, 30(8), 842–855.
<http://doi.org/10.1521/jscp.2011.30.8.842>
- De Los Reyes, A., Goodman, K. L., Kliewer, W., & Reid-Quinones, K. (2008). Whose
 depression relates to discrepancies? Testing relations between informant
 characteristics and informant discrepancies from both informants' perspectives.
Psychological Assessment, 20(2), 139–149. <http://doi.org/10.1037/1040-3590.20.2.139>
- Dean, A., Lin, N., & Ensel, W. M. (1981). The epidemiological significance of social
 support systems in depression. *Research in Community & Mental Health*, 2, 77–
 109.
- Dingfelder, H. E., Jaffee, S. R., & Mandell, D. S. (2010). The impact of social support on
 depressive symptoms among adolescents in the child welfare system: A

- propensity score analysis. *Children and Youth Services Review*, 32(10), 1255–1261. <http://doi.org/10.1016/j.childyouth.2010.04.016>
- Don, B. P., & Mickelson, K. D. (2012). Paternal postpartum depression: The role of maternal postpartum depression, spousal support, and relationship satisfaction. *Couple and Family Psychology: Research and Practice*, 1(4), 323–334. <http://doi.org/10.1037/a0029148>
- Ensel, W. M., & Lin, N. (1991). The life stress paradigm and psychological distress. *Journal of Health and Social Behavior*, 32(4), 321–341. <http://doi.org/10.2307/2137101>
- Flynn, M., Kecmanovic, J., & Alloy, L. B. (2010). An examination of integrated cognitive-interpersonal vulnerability to depression: The role of rumination, perceived social support, and interpersonal stress generation. *Cognitive Therapy and Research*, 34(5), 456–466. <http://doi.org/10.1007/s10608-010-9300-8>
- Gilboa-Schechtman, E., Foa, E., Vaknin, Y., Marom, S., & Hermesh, H. (2008). Interpersonal sensitivity and response bias in social phobia and depression: Labeling emotional expressions. *Cognitive Therapy and Research*, 32(5), 605–618. <http://doi.org/10.1007/s10608-008-9208-8>
- Haefffel, G. J., Voelz, Z. R., & Joiner, T. E. J. (2007). Vulnerability to depressive symptoms: Clarifying the role of excessive reassurance seeking and perceived social support in an interpersonal model of depression. *Cognition and Emotion*, 21(3), 681–688. <http://doi.org/10.1080/02699930600684922>
- Harris, G., & Brown, T. (1978). *Social Origins of Depression: A History of Psychiatric Disorder in Women* (1st ed.). Tavistock Publications Ltd.

- Ibarra-Rovillard, M. S., & Kuiper, N. A. (2011). Social support and social negativity findings in depression: Perceived responsiveness to basic psychological needs. *Clinical Psychology Review, 31*(3), 342–352.
<http://doi.org/10.1016/j.cpr.2011.01.005>
- Ingersoll-Dayton, B., & Antonucci, T. C. (1988). Reciprocal and nonreciprocal social support: Contrasting sides of intimate relationships. *Journal of Gerontology, 43*(3), S65–S73. <http://doi.org/10.1093/geronj/43.3.S65>
- Joiner, T. E. J. (1999). A test of interpersonal theory of depression in youth psychiatric inpatients. *Journal of Abnormal Child Psychology: An Official Publication of the International Society for Research in Child and Adolescent Psychopathology, 27*(1), 77–85. <http://doi.org/10.1023/A:1022666424731>
- Joiner, T. E. J., Pettit, J. W., Walker, R. L., Voelz, Z. R., Cruz, J., Rudd, M. D., & Lester, D. (2002). Perceived burdensomeness and suicidality: Two studies on the suicide notes of those attempting and those completing suicide. *Journal of Social and Clinical Psychology, 21*(5), 531–545. <http://doi.org/10.1521/jscp.21.5.531.22624>
- Joiner, T. E. J., Wingate, L. R., & Otamendi, A. (2005). An interpersonal addendum to the hopelessness theory of depression: Hopelessness as a stress and depression generator. *Journal of Social and Clinical Psychology, 24*(5), 649–664.
<http://doi.org/10.1521/jscp.2005.24.5.649>
- Joormann, J., Levens, S. M., & Gotlib, I. H. (2011). Sticky Thoughts Depression and Rumination Are Associated With Difficulties Manipulating Emotional Material in Working Memory. *Psychological Science, 22*(8), 979–983.
<http://doi.org/10.1177/0956797611415539>

Käse, M., Dresler, T., Andreatta, M., Ehlis, A.-C., Wolff, B., Kittel-Schneider, S., ...

Mühlberger, A. (2013). Is there a negative interpretation bias in depressed patients? An affective startle modulation study. *Neuropsychobiology*, 67(4), 201–209.

Katerndahl, D., Burge, S., Ferrer, R., Becho, J., & Wood, R. (2013). Differences in social network structure and support among women in violent relationships. *Journal of Interpersonal Violence*, 28(9), 1948–1964.

Kim, E. S., & Kim, B. S. (2009). The structural relationships of social support, mother's psychological status, and maternal sensitivity to attachment security in children with disabilities. *Asia Pacific Education Review*, 10(4), 561–573.

<http://doi.org/10.1007/s12564-009-9043-y>

Kleinberg, A., Aluoja, A., & Vasar, V. (2013). Social support in depression: Structural and functional factors, perceived control and help-seeking. *Epidemiology and Psychiatric Sciences*, 22(4), 345–353.

<http://doi.org/10.1017/S2045796013000504>

Lin, N., & Dean, Alfred. (1986). *Social Support, Life Events, and Depression*. (Ensel, Walter, Ed.) (1st ed.). Academic Press.

Lin, N., Simeone, R. S., Ensel, W. M., & Kuo, W. (1979). Social support, stressful life events, and illness: A model and an empirical test. *Journal of Health and Social Behavior*, 20(2), 108–119. <http://doi.org/10.2307/2136433>

Marroquín, B. (2011). Interpersonal emotion regulation as a mechanism of social support in depression. *Clinical Psychology Review*, 31(8), 1276–1290.

<http://doi.org/10.1016/j.cpr.2011.09.005>

- Oppenheimer, C. W., Technow, J. R., Hankin, B. L., Young, J. F., & Abela, J. R. Z. (2012). Rumination and excessive reassurance seeking: Investigation of the vulnerability model and specificity to depression. *International Journal of Cognitive Therapy*, 5(3), 254–267. <http://doi.org/10.1521/ijct.2012.5.3.254>
- Pan, A.-W., Chen, Y.-L., Chung, L.-I., Wang, J.-D., Chen, T.-J., & Hsiung, P.-C. (2012). A longitudinal study of the predictors of quality of life in patients with major depressive disorder utilizing a linear mixed effect model. *Psychiatry Research*. <http://doi.org/10.1016/j.psychres.2012.02.001>
- Panayiotou, G., & Karekla, M. (2013). Perceived social support helps, but does not buffer the negative impact of anxiety disorders on quality of life and perceived stress. *Social Psychiatry and Psychiatric Epidemiology*, 48(2), 283–294. <http://doi.org/10.1007/s00127-012-0533-6>
- Pang, Y., Hong, W., Zhao, N., & Yin, J. (2011). Mediating effect of self-perception on the relationship between social support and depression. *Chinese Journal of Clinical Psychology*, 19(3), 353–354.
- Peek, M. K., & Lin, N. (1999). Age differences in the effects of network composition on psychological distress. *Social Science & Medicine*, 49(5), 621–636. [http://doi.org/10.1016/S0277-9536\(99\)00139-2](http://doi.org/10.1016/S0277-9536(99)00139-2)
- Pfeiffer, P. N., Heisler, M., Piette, J. D., Rogers, M. A. M., & Valenstein, M. (2011). Efficacy of peer support interventions for depression: a meta-analysis. *General Hospital Psychiatry*, 33(1), 29–36. <http://doi.org/10.1016/j.genhosppsych.2010.10.002>

- Sandberg, J. G., & Harper, J. M. (1999). Depression in mature marriages: Impact and implications for marital therapy. *Journal of Marital and Family Therapy*, 25(3), 393–406. <http://doi.org/10.1111/j.1752-0606.1999.tb00256.x>
- Sarason, I. G., Levine, H. M., Basham, R. B., & Sarason, B. R. (1983). Assessing social support: The Social Support Questionnaire. *Journal of Personality and Social Psychology*, 44(1), 127–139. <http://doi.org/10.1037/0022-3514.44.1.127>
- Sarason, I. G., Sarason, B. R., Shearin, E. N., & Pierce, G. R. (1987). A Brief Measure of Social Support: Practical and Theoretical Implications. *Journal of Social and Personal Relationships*, 4(4), 497–510. <http://doi.org/10.1177/0265407587044007>
- Sato, H., & Kawahara, J. (2011). Selective bias in retrospective self-reports of negative mood states. *Anxiety, Stress & Coping: An International Journal*, 24(4), 359–367. <http://doi.org/10.1080/10615806.2010.543132>
- Saunders, S. M. (2000). Examining the relationship between the therapeutic bond and the phases of treatment outcome. *Psychotherapy: Theory, Research, Practice, Training*, 37(3), 206–218. <http://doi.org/10.1037/h0087827>
- Shouse, J. N., Rowe, S. V., & Mast, B. T. (2013). Depression and cognitive functioning as predictors of social network size. *Clinical Gerontologist: The Journal of Aging and Mental Health*, 36(2), 147–161.
- Sigmon, S. T., Pells, J. J., Boulard, N. E., Whitcomb-Smith, S., Edenfield, T. M., Hermann, B. A., ... Kubik, E. (2005). Gender differences in self-reports of depression: The response bias hypothesis revisited. *Sex Roles*, 53(5-6), 401–411. <http://doi.org/10.1007/s11199-005-6762-3>

- Smith, D., & Ruston, A. (2013). 'If you feel that nobody wants you you'll withdraw into your own': Gypsies/Travellers, networks and healthcare utilisation. *Sociology of Health & Illness*, 35(8), 1196–1210.
- Steer, R. A., Ball, R., Ranieri, W. F., & Beck, A. T. (1997). Further evidence for the construct validity of the Beck Depression Inventory-II with psychiatric outpatients. *Psychological Reports*, 80(2), 443–446.
<http://doi.org/10.2466/pr0.1997.80.2.443>
- Steer, R. A., Clark, D. A., Kumar, G., & Beck, A. T. (2008). Common and specific dimensions of self-reported anxiety and depression in adolescent outpatients. *Journal of Psychopathology and Behavioral Assessment*, 30(3), 163–170.
<http://doi.org/10.1007/s10862-007-9060-2>
- Stice, E., Rohde, P., Gau, J., & Ochner, C. (2011). Relation of depression to perceived social support: Results from a randomized adolescent depression prevention trial. *Behaviour Research and Therapy*, 49(5), 361–366.
<http://doi.org/10.1016/j.brat.2011.02.009>
- Stokes, J. P. (1983). Predicting satisfaction with social support from social network structure. *American Journal of Community Psychology*, 11(2), 141–152.
<http://doi.org/10.1007/BF00894363>
- Tse, W. S., Rochelle, T. L., & Cheung, J. C. K. (2011). The relationship between personality, social functioning, and depression: A structural equation modeling analysis. *International Journal of Psychology*, 46(3), 234–240.
- Wright, K. B., King, S., & Rosenberg, J. (2014). Functions of social support and self-verification in association with loneliness, depression, and stress. *Journal of*

Health Communication, 19(1), 82–99.

<http://doi.org/10.1080/10810730.2013.798385>

Yang, J., Yao, S., Zhu, X., Zhang, C., Ling, Y., Abela, J. R. Z., ... McWhinnie, C.

(2010). The impact of stress on depressive symptoms is moderated by social support in Chinese adolescents with subthreshold depression: A multi-wave longitudinal study. *Journal of Affective Disorders*, 127(1–3), 113–121.

<http://doi.org/10.1016/j.jad.2010.04.023>

Zhu, X., Woo, S. E., Porter, C., & Brzezinski, M. (2013). Pathways to happiness: From personality to social networks and perceived support. *Social Networks*, 35(3), 382–393. <http://doi.org/10.1016/j.socnet.2013.04.005>