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Development and Validation of a Measure for Social Support: Perceived Social Support Inventory

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DEVELOPMENT AND VALIDATION OF A MEASURE FOR SOCIAL SUPPORT: PERCEIVED SOCIAL SUPPORT INVENTORY

A Dissertation

Submitted to the Graduate Faculty of
Louisiana State University and
Agricultural and Mechanical College
in partial fulfillment of the
requirements for the degree of
Doctor of Philosophy

in

The Department of Psychology

by
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August 2022

Acknowledgments

I would like to express my deep appreciation and gratitude to the following people. First, I would like to extend gratitude to my dissertation chair and advisor, Dr. Mary Lou Kelley, for her invaluable assistance, knowledge, and encouragement throughout my doctoral studies. I would also like to acknowledge my committee members, Dr. Emily Elliott and Dr. Amy Copeland, for serving on my dissertation committee, in addition to supporting me throughout my academic career at LSU. Thank you to Dr. Bijoyaa Mohapatra for serving as my dean's representative and for the thoughtful feedback on my dissertation. To KBB and my graduate cohort, I cannot thank each of you enough for all of your guidance, assistance, and support during my time at LSU, and for helping me to get to this point. I am also incredibly grateful for my parents, and the numerous family and friends that have supported me throughout my academic studies in more ways than I can count. Finally, I would like to express gratitude to my wonderful fiancé, Fernando Rangel, for the unwavering support and encouragement that you have provided throughout my graduate studies, and for building me up and being my greatest supporter.

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Abstract

The literature consistently acknowledges the protective function of social support against various negative psychological and physiological outcomes (Cohen & Wills, 1985; Dunst et al., 1986; Taylor, 2011; Uchino, 2009). Further, social support can emerge from different members that comprise an individual's social network, such as friends, family, teachers, colleagues, and members of common interest groups. Given the important role that social support plays in health outcomes, the importance of psychometrically sound measures for assessing the construct is essential for use in research and clinical settings. However, many of the current measures of social support are outdated, are limited in their psychometric properties, and fail to include several valuable sources of support. The current study sought to address these limitations through the development and validation of a new measure of social support, the Perceived Social Support Inventory.

Introduction

Decades of research have found social support to be a protective factor, mitigating the impact of a variety of stressors on mental health outcomes. Researchers have identified the protective role of social support for mental and physical health in response to stressful events. In particular, social support acts as an important facilitator for coping with negative and stressful events (Cohen & Wills, 1985; Coyne & Downey, 1991; Lakey & Orehek, 2011; Thoits, 1986). This finding is also believed to have roots in early development and attachment processes, as nurturant and supportive environments tend to improve the ability to thrive and increase positive developmental outcomes (Elsenbruch et al., 2007; Taylor, 2011). Given the positive association between social support and beneficial outcomes in physical health and psychological adjustment, measurement of this construct is crucial to assessment and treatment of psychopathology.

Gaining insight into one's resources for social support may be beneficial for both treatment and prevention of the negative effects of stress. Despite the presence of several psychological instruments for measuring social support, many of the measurements are limited psychometrically and in their clinical utility. These limitations may include psychometric limitations related to scale development, homogenous samples that do not adequately include cultural and ethnic minorities, and limited factor structures. The proposed study seeks to address the limitations by developing a valid and reliable tool to measure social support that utilizes updated research literature and is based on a heterogenous sample representative of cultural and ethnic minorities.

There is general consensus regarding the definition of social support. Namely, that social support is defined as an individual's perceived or experienced sense of care, comfort, love, worth, and assistance provided by one's social network (Cobb, 1976; Hobfoll & Vaux, 1993;

Wills, 1991). Within the definition of social support lies the concept of one's social network, which is comprised of the interconnections of people who provide and receive social support (Heaney & Israel, 2008; Langford et al., 1997).

Forms and Models of Social Support

Social support is often differentiated by two domains. The first, *received* social support, focuses on supportive acts that are received by an individual (Haber et al., 2007; Melrose et al., 2015; Taylor, 2011). In contrast, *perceived* social support is defined as an individual's subjective perception of the existence and provision of support. (Barrera, 1986; Haber et al., 2007; Lakey & Cohen, 2000). The literature consistently has found that perceived and received social support are both related to positive physical and mental health outcomes. Research on perceived social support has suggested that access to social support can lead to reductions in stress regardless of whether or not an individual actually receives the support (Barrera, 1986; Taylor, 2011; Zimet et al., 1988). Similarly, research consistently has demonstrated the association between perceived social support and positive health outcomes (Holt & Espelage, 2007; Lefkovics et al., 2018; Martins et al., 2011; Wethington & Kessler, 1986). However, some studies have shown that measures of perceived social support may result in inaccuracies due to the reliance on subjective appraisals of perceived support. This may include issues such as fluctuations in perception of support over time, differences in objective recall and judgment of support behavior, and disparities on definitions of supportive behavior that may be ill-defined or misconstrued by the individuals being assessed (Cohen & Wills, 1985; Hobfoll & Vaux, 1993). Assessment of received social support seeks to objectively quantify support behavior. Some have suggested that measures of received social support may provide a more accurate representation of support due to the fact that they require an individual to report on specific experiences rather than reliance on

perceptions (Barrera, 1986). Research has found that perceived support more often leads to positive outcomes than received support (Barrera, 1986; Wethington & Kessler, 1986). Further, some studies suggest that received support is negatively associated with beneficial health outcomes (Uchino, 2009). Although the concepts of perceived and received social support appear to be highly associated, much of the literature consistently indicates a weak relation between the two constructs (Haber et al., 2007; Lakey & Orehek, 2011; Uchino, 2009).

Within the two domains of social support are four specific forms of social support: instrumental, informational, appraisal, and emotional. Instrumental support is defined as tangible assistance, resources, and services that apply to a person in need (Heaney & Israel, 2008; Malecki & Demaray, 2003). Examples of this type of support include things such as direct assistance from a teacher on a class assignment, providing a ride to a doctor's appointment, or delivering meals to a sick loved-one's home. Informational support is conceptualized as advice or information that helps an individual in some way (Heaney & Israel, 2008; Taylor, 2011). This can include providing suggestions to improve exercise habits or providing expert information on a medical treatment. Appraisal support is defined as feedback provided that is utilized for self-evaluation (Langford et al., 1997). Appraisal support consists of behavior such as providing constructive feedback on a friend's artwork or advising a partner on choosing their outfit. Finally, emotional support is conceptualized as supplying feelings of love, empathy, nurturance, trust, and caring to another (Langford et al., 1997; Malecki & Demaray, 2003). Examples of emotional support include behavior such as being forthcoming with a partner, exhibiting concern for one's well-being, and validating an individual's feelings. Provision of these four forms of social support can be dependent on several factors, including the context of a specific situation, or the relationship in which they are displayed. Further, it is common for individuals to provide a

combination of multiple forms of support (i.e., providing both emotional and instrumental support) rather than one single form within the context of a supportive relationship. As a result, measurement of these constructs is rather complicated (Heaney & Israel, 2008).

The literature posits several theoretical models to explain the relationship between social support and positive outcomes in physical and psychological health. The first, and arguably most influential theory is that of the stress-buffering theory. The stress-buffering theory of social support hypothesizes that social support acts a "buffer" that protects an individual from the potentially negative outcomes that occur as the result of encountering stress (Cohen & Wills, 1985). Further, the stress-buffering theory operates on the stress-support matching hypothesis; the idea that resources for social support should sufficiently match the experience of stress. This hypothesis posits that social support exhibits a protective effect in response to stress only under the circumstances that the availability for support is sufficiently matched to the level of experienced stress (Lakey & Cohen, 2000). Moreover, social support does not appear to have any benefit on physical or psychological health in the absence of a stressor (Cohen & Wills, 1985). In contrast, the main effects theory undertakes a more general hypothesis that social support, in general, is associated with positive outcomes in psychological and physical well-being, regardless of the presence of a stressor (Cohen & Wills, 1985). This theory states that social support can foster positive experiences that result in decreased psychological distress, improved neuroendocrine function, provide stability and social rewards, enhance feelings of belonging and increased self-worth, and intrinsic motivation to improve one's self as the result of social influence (Cohen et al., 2000; Cohen & Wills, 1985; Kawachi & Berkman, 2001; Lakey & Orehek, 2011). However, empirical support for the main effect model remains limited, despite its robust establishment in the literature (Cohen et al., 2000; El-Bassel et al., 1998). Despite the

differences in the main effect and stress-buffering theories of social support, some researchers postulate that the two theories may operate collaboratively (Ditzen & Heinrichs, 2014; Kawachi & Berkman, 2001). Finally, a more recent model, the relational regulation theory (RRT), was developed in response to inconsistencies of findings related to the processes of social support and personality. Relational regulation theory is defined as the association between perceived support and psychological well-being are the result of affective regulation in response to conversations and shared activities with one another (Dyregrov et al., 2018; Lakey & Orehek, 2011; Shorey & Lakey, 2011). This theory centers on the existing empirical evidence of the associations between perceived support and emotional health, and centers on the idea that social interaction plays a large role in affect regulation, demonstrating the importance of relational influences in psychological health. Further, RRT seeks to offer a solution to the difficulties encountered in replicating the effects of the stress-buffering hypothesis (Lakey & Orehek, 2011). RRT as a theory of social support is still in its infancy, but some studies have indicated its promise as a model of social support (Dyregrov et al., 2018; Rodwell & Munro, 2013; Shorey & Lakey, 2011).

The Role of Social Support in Psychological Health

There is an abundance of research on the many benefits of social support on psychological health and well-being. In general, individuals who receive high levels of social support tend to exhibit better psychological adjustment than those with low levels of social support (Büyükkayacı Duman & Kocak, 2013; Collins et al., 1993; Dunst et al., 1986; Holahan & Moos, 1981). Additionally, social support appears to promote resiliency in response to significant stressors (Brown, 2008; Pietrzak et al., 2009; Tsai et al., 2012). Social support is also related to positive outcomes in personal ability, such as higher frustration tolerance and enhanced

task performance (Rees & Freeman, 2009; Sarason et al., 1983). This is specifically reflected throughout the research examining the importance of social support and academic achievement. For example, a study conducted by Rosenfeld, Richman, & Bowen (2000) demonstrated that perceived social support can increase a student's academic engagement, self-efficacy, and satisfaction. Further, adolescents who receive social support report less test anxiety and higher academic motivation and achievement (Song et al., 2015). The findings have been replicated in collegiate populations (DeBerard et al., 2004; Li et al., 2018).

In addition to the direct impacts of social support on an individual's mental health and well-being, research suggests that an individual's level of social support can have consequences for those around them. This is specifically exhibited in the research literature regarding social support in parents. In general, the presence of social support in parents can positively contribute to overall well-being and functioning within the family (Armstrong et al., 2005). Social support can also lead to a stronger co-parenting alliance in both heterosexual and homosexual adoptive parents (Sumontha et al., 2016). Further, social support can have an impact on children while in the womb, as demonstrated by studies examining the impact of social support on pregnancy. Research shows that mothers with higher social support have better progress in labor, and deliver babies with higher Apgar scores and higher birth weights (Collins et al., 1993). Further, mothers who reported more support during pregnancy exhibited less postpartum distress, and had babies who exhibited less distress (Stapleton et al., 2012). Another study found that mothers who reported more social support had less parenting stress, and as a result, their infants were less likely to experience inflammation at ages 12 and 18 months (Nelson et al., 2020). Assessment of parental social support is critical, as mothers who perceive or receive less social support are more

likely to exhibit maternal stress or depression, which can lead to negative parenting practices that impact child development (Barnet et al., 1996; Elsenbruch et al., 2007; Huang et al., 2014).

Research on the relationship between specific psychological disorders and social support consistently demonstrates that social support mitigates the relationship between psychopathology and experiences of psychological distress. There is strong evidence that social support decreases the likelihood of development and mitigation of symptomatology for major depressive and anxiety disorders (Büyükkayacı Duman & Kocak, 2013; Dour et al., 2014; Patil et al., 2014; Sangalang & Gee, 2012). Research has shown that social support can have protective effects against psychologically distressing situations and environments. For instance, a study conducted by Martins and colleagues (2011) found that perceived partner support was associated with lower levels of infertility-related stress, as well as decreased stress within the relationship for women seeking treatment for infertility. Similar findings were discovered in a study with individuals who experienced involuntary childlessness (e.g., persons desiring a child who are unable to conceive). This study found that individuals who were dissatisfied with their received social support were more likely to engage in passive coping styles (e.g., withdrawal from others, avoidance behaviors, inability to complete tasks) that are less effective in managing distressing situations, in addition to increased likelihood of experiencing psychological distress including depression, anxiety, and complicated grief (Lechner et al., 2007). Social support and the presence of a healthy social network for women who are victims of intimate partner violence is also implicated to protect against detrimental psychological outcomes, such as substance abuse, anxiety, PTSD, and suicide (Coker et al., 2002). The buffering effect of social support has also been observed in research regarding suicide, exemplifying the importance of a social network in preventing suicide attempts (Compton et al., 2005; Kleiman & Liu, 2013; Trujillo et al., 2020).

Interestingly, the protective effect of social support on suicidality appears to hold despite complex and distressing environmental factors that contribute to suicide, such as in the study conducted by Trujillo and colleagues (2020). Their findings suggested that social support protected against the negative effects of heterosexism that contribute to suicidal ideation in non-White LGBQ adults. Further, social support appears to protect against the development of PTSD in response to experiencing a traumatic event (Dworkin et al., 2018; Hyman et al., 2003; McGuire et al., 2018; Nguyen et al., 2016). Thus, social support effectively buffers the impact of psychological distress in individuals from various backgrounds, such as transgender individuals (Budge et al., 2013), African Americans (Burke et al., 2010; Compton et al., 2005; Nguyen et al., 2016), the elderly (Patil et al., 2014), and Asian Americans (Sangalang & Gee, 2012).

Although the presence of social support can positively impact well-being, the absence of social support appears to have a negative impact on psychological well-being (Aneshensel & Stone, 1982; Boyd, 2002; Lakey & Cronin, 2008). For example, in a longitudinal study conducted by Holahan and Moos (1981), individuals who perceived diminished social support from family members and coworkers showed increases in psychological maladjustment over time. Another study found that lower levels of perceived social support was associated with higher eating disorders symptoms in a sample of female college students aged 18-24 (Wonderlich-Tierney & Vander Wal, 2010). Further, decreased levels of social support in conjunction with lower levels of social embeddedness (e.g., the level or degree of social connection between an individual and the members of their social network) is associated with a greater likelihood of attempted suicide in African American adults (Compton et al., 2005). Lower levels of perceived social support is also associated with increased risk for exhibiting depressive symptoms in college students (Hefner & Eisenberg, 2009).

Researchers have attempted to explain the increased risk of mental health problems that result from lower levels of social support. Most of the researchers adopted a developmental approach to explaining the importance of social support in the prevention of psychological distress and maladjustment. Several of these studies are rooted in Bowlby's attachment theories posed in his 3-volume work entitled Attachment & Loss (Bowlby, 1969, 1973, 1980). According to Bowlby, children instinctively behave in ways that elicit specific biologically-related responses that support the healthy development for a child and allow them to explore their environment. Further, a child who is securely attached to their mother during infancy is more likely to develop healthy, secure relationships across the lifespan (Bowlby, 1969, 1973, 1988). Attachment theory relates to social support through the idea that individuals who possess a secure attachment orientation are more likely to seek social support and perceive that support as helpful and beneficial and actively seek support when necessary (Mikulincer & Shaver, 2009). In contrast, insecurely attached individuals (e.g., anxious or avoidant attachment styles) are more likely to be dissatisfied with their social support network and messages of social support, and are less likely to seek assistance from a source of support (Anders & Tucker, 2000; Collins & Feeney, 2004; Mallinckrodt & Wei, 2005; Vogel & Wei, 2005). This further leads to experiences of psychological distress. Studies examining social support through an attachment lens have found that insecurely attached individuals tend to exhibit deficits in interpersonal communication, such as lack of social self-efficacy and self-disclosure (Anders & Tucker, 2000; Mallinckrodt & Wei, 2005). These deficits may further explain the difficulties in developing and maintaining relationships that are socially supportive, which in turn leads to smaller social networks and increased psychological distress. Other theories explaining the role of social support in decreasing negative psychological outcomes have found that social support plays a

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mediating role between stressors and psychological maladjustment (Dour et al., 2014; Dunst et al., 1986; Stapleton et al., 2012; Tsai et al., 2012; Vranceanu et al., 2007). Some explanations for the mediating role of social support include findings that suggest that social support is positively associated with other behaviors and characteristics (e.g., positive attitudes, perceived self-efficacy) that may further facilitate positive psychological outcomes (Dour et al., 2014; Dunst et al., 1986; Weiss et al., 2013).

Sources of Social Support

Research has identified that social support can be provided through a variety of sources and within the context of different relationships that make up an individual's social network. Much of the research literature concerning social support has focused on close individuals within one's social network. Traditionally, these sources include family members, friends, and significant others or romantic partners (Thoits, 1995; Zimet et al., 1988). However, research has identified alternative sources of social support that can enhance positive physiological and psychosocial outcomes, including colleagues (Peeters & Le Blanc, 2001; van Daalen et al., 2005), teachers (Malecki & Demaray, 2003), church members (Chatters et al., 2011; Krause, 2002; Krause et al., 2001; Nooney & Woodrum, 2002), and online companions, forums, and social media websites (Baker & Yang, 2018; Gilmour et al., 2020; Goswami et al., 2010; Stana et al., 2017). Further, some research has found positive outcomes associated with membership in groups created with the intent to provide social support to a specific aspect of the population (Logie et al., 2016; Stana et al., 2017; Winzelberg et al., 2003). This includes special connections based on shared personal characteristics, such as race or culture. Specifically, many minority cultures such as Asian and African American communities, have formed their own social networks due to shared experiences as a racial minority (Brown, 2008; Kim et al., 2008). Thus, it

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is important for future studies of social support to conceptualize sources of support within a wide scope of individuals, organizations, and communities in one's social network.

Existing Measures of Social Support

There are several measures for evaluating social support in adults. However, many of the measures are limited in a number of ways. Several of the measures only examined a single source of support and do not capture a comprehensive view of an individual's social support network. Further, some measures of social support are outdated and have not been revised to take a contemporary view of social support in light of recent developments within the research literature. The following is a review of several of the most commonly used measures of social support, including their psychometric properties, strengths, and limitations.

Multidimensional Scale of Perceived Social Support

The Multidimensional Scale of Perceived Social Support (MSPSS) is a self-report scale that measures an individual's perception of quality of social support (Zimet et al., 1988). The MSPSS is one of the most frequently used measure of social support throughout the research literature (Dambi et al., 2018). The scale consists of 12 items rated on a 7-point Likert scale that ranges from 1 = "very strongly disagree" to 7 = "very strongly agree". A total score is derived from computing the sum of the 12 items, with higher scores indicative of higher levels of perceived social support (Zimet et al., 1988). Further, factor analyses established a factor structure of three factors. The three factors are Family, Friends, and Significant Other.

Initial validation of the MSPSS was conducted in a sample of 275 undergraduate students, and resulted in moderate construct validity when comparing the MSPSS to the anxiety and depression subscales of the Hopkins Symptom Checklist (HSCL), with findings showing that the Family subscale demonstrated an inverse relationship to both anxiety and depression (r =

- .24, $p < .01$, and r = - .18 $p < .01$, respectively), while the Friends subscale (r = - .24, $p < .01$) and the Significant Other subscale (r = - .13, $p < .05$) demonstrated a significant relationship with depression (Zimet et al., 1988). Cronbach's coefficient alpha was computed to analyze internal reliability and demonstrated excellent internal consistency for the Significant Other ($\alpha = .91$), and good internal consistency for the Family ($\alpha = .87$) and Friends ($\alpha = .85$) factors as well as the Total scale ($\alpha = .88$). Test-retest reliability resulted in good internal reliability for the Total scale ($\alpha = .85$) and Family subscale ($\alpha = .85$), with acceptable reliability for the Significant Other ($\alpha = .72$) and Friends ($\alpha = .91$) subscales (Zimet et al., 1988).

Subsequent studies have further established the validity and reliability of the MSPSS for administration to a variety of populations, including urban and Mexican-American adolescents, and pregnant women (Canty-Mitchell & Zimet, 2000; Edwards, 2004; Zimet et al., 1990). In addition, the measure is quick to administer given its brief content, and is easy to understand due to being written at a lower reading level (Canty-Mitchell & Zimet, 2000). However, the MSPSS presents several limitations. Arguably, the largest limitation of the MSPSS is that it only measures social support from three sources. This raises questions regarding the clinical utility of the measure, given that social support consists of sources that are both formal (e.g., physicians and healthcare providers) and informal (e.g., friends and family) (Heaney & Israel, 2008). In addition to excluding potential sources of social support, the MSPSS also demonstrates a tendency to elicit socially desirable responses (Zimet et al., 1988; Zimet et al., 1990). This bias in responding can potentially undermine the clinical utility of this measure, as it could result in inaccurate detection of individuals who need greater supports. Finally, the brief nature of the MSPSS limits its measurement capacity to merely evaluate an individual's perception of adequacy of support from family, friends, and significant others (Canty-Mitchell & Zimet, 2000).

As a result, the MSPSS misses several important constructs of social support, such as satisfaction with social support and other sources of support.

Interpersonal Support Evaluation List

The Interpersonal Support Evaluation List (ISEL) is a measure of perceived support based on the theory of the stress-buffering hypothesis of social support, and includes 40 items that evaluate an individual's perception of resources of social support that are accessible to them (Cohen & Hoberman, 1983). Items on the ISEL are rated on a 4-point Likert scale. Item statements are counterbalanced with 20 items consisting of positive statements and 20 items consisting of negative statements in an attempt to reduce socially desirable responding (Cohen et al., 1985). The ISEL has 4 subscales each comprised of 10 items. The subscales are Tangible (i.e., instrumental sources of support), Appraisal (i.e., the perception that one has people to discuss their problems with), Self-esteem (i.e., the availability of having positive others to compare oneself to), and the Belonging subscale (i.e., the availability of people with whom to spend time and activities) (Cohen & Hoberman, 1983).

Psychometric properties of the ISEL are variable. First, the racial/ethnic composition of the standardization sample is unclear as it was not reported in initial or follow-up studies (Cohen & Hoberman, 1983; Cohen et al., 1985). In the initial validation study, internal reliability for the total score scale (α = .77) and tangible, belonging, and appraisal scales (α = .71, .75, and .77, respectively) demonstrate acceptable internal reliability, while the self-esteem scale (α = .60) is exhibits questionable internal reliability (Cohen & Hoberman, 1983). The ISEL also exhibits good test-retest reliability for the total score scale, as evidenced by a correlation of .74, but adequate correlations for the belonging and appraisal scales (.68 and .60, respectively), and inadequate correlations for the self-esteem and tangible scales (.54 and .49, respectively) (Cohen

et al., 1985). The four-factor structure of the ISEL has demonstrated inconsistencies. Follow-up studies report high intercorrelations amongst the appraisal, belonging, and self-esteem scales of the ISEL, ranging from .48 to .73 (Cohen et al., 1985). Additionally, Brookings and Bolton (1988) found large interfactor correlations between the four scales, suggesting that the ISEL is not a multidimensional measure of perceived social support. Schonfeld (1991) found moderate correlations between the appraisal, tangible, and belonging scales, while a study conducted by Rogers et al. (2004) failed to differentiate between items on the self-esteem and belonging scales, further suggesting the unidimensional nature of the ISEL.

There are several strengths in utilizing the ISEL as a measure of social support. Primarily, the ISEL examines the four specific types of social support and is theoretically derived from the stress-buffering hypothesis of social support (Barrera, 2000; Cohen & Hoberman, 1983). Further, items on the ISEL are counterbalanced in order to prevent socially desirable responding (Cohen et al., 1985). However, the ISEL is limited due to the mixed results of the internal reliability of the four scales (Cohen & Hoberman, 1983). Additionally, the inconsistencies in the factor structure of the ISEL often results in strong preference for using the total scale score over the four scale scores, which lends to potentially missing important information regarding the four dimensions of social support (Brookings & Bolton, 1988; Rogers et al., 2004; Schonfeld, 1991).

Inventory of Socially Supportive Behaviors

The Inventory of Socially Supportive Behaviors (ISSB) is a 40-item measure of social support aimed at identifying the amount of support that an individual has received over the past month (Barrera et al., 1981). The measure requires individuals to rate the frequency in which they have received a variety of types of social support through a 5-point Likert scale, ranging from 1 = "not at all" to 5 = "about every day". Standardization of the ISSB is based on a sample

of predominantly White undergraduate students (Barrera Jr. & Ainlay, 1983; Barrera et al., 1981; Finch et al., 1997). Further, the sum of the 40 items create a total frequency score in which higher scores indicative of greater instances of received social support (Barrera et al., 1981). An initial factor analysis revealed four distinct factors for the ISSB; Directive Guidance, which refers to concepts such as providing feedback and advice, Nondirective Support, which refers to activities and expressions of intimacy, availability, and trust, Tangible Assistance, which refers to physical or material forms of assistance, and Positive Social Interaction, which refers to choosing to interact socially with others for fun or relaxation (Barrera & Ainlay, 1983).

The factor structure of the ISSB exhibits several issues. First, the Positive Social Interaction factor has several high loading items that are inconsistent with the content of the scale (Barrera Jr. & Ainlay, 1983). Confirmatory factor analyses have found high intercorrelations between the Nondirective Support and Positive Social Exchange factors, suggesting that these items may be ill-defined (Finch et al., 1997). Additionally, 7 items from the ISSB were not frequently endorsed in the original study, but frequently endorsed in follow-up studies with a similar population, demonstrating inconsistencies in measure content (Barrera et al., 1981; Stokes & Wilson, 1984). Finally, the clinical utility of the four factors of the ISSB appear to be undetermined, as the authors tend to favor use of the total score (Finch et al., 1997).

Social Support Questionnaire

The Social Support Questionnaire (SSQ) is a 27-item measure that assesses an individual's availability and satisfaction with their own personal sources of social support (Sarason et al., 1983). The standardization sample of the SSQ consists of undergraduate students, though the authors declined to report the racial/ethnic makeup of the sample. The 27 items on the SSQ are each comprised of two parts, the first of which requires respondents to list the

individuals who they can rely on for support in a given situation (up to nine people), and the second part of each item that requires respondents to rate their level of satisfaction with the collective support from this group of individuals on a 6-point Likert scale ranging from "very satisfied" to "very dissatisfied" (Sarason et al., 1983). Scores are derived by computing the mean number (N), which is the number of individuals listed for support for a particular item, and the satisfaction (S) score, which is the level of satisfaction rated for each item. Additionally, overall N and S scores are computed by summing the scores of the 27 items and computing a mean for the N and S scores (Sarason et al., 1983). Psychometric properties of the SSQ indicate high internal consistency and strong stability, and factor analyses support a two-factor structure for the SSQ-N and SSQ-S factors (B. R. Sarason et al., 1987; I. G. Sarason et al., 1987).

Due to the cumbersome nature of the initial 27 items, the SSQ was modified to create the Social Support Questionnaire – Short Form (SSQ-6), a 6-item measure of perceived social support derived from the original measure (I. G. Sarason et al., 1987). Similar to the SSQ, the SSQ-6 asks participants to list individuals who provide support, and rate their satisfaction with the source. (I. G. Sarason et al., 1987). The SSQ-6 demonstrates good concurrent validity with the SSQ, and replicated the SSQ two factor structure (Furukawa et al., 1999; I. G. Sarason et al., 1987). One of the unique strengths of the SSQ/SSQ-6 is that it is one of few social support measures that assess an individual's social network size. Additionally, it allows the respondent to personally define sources of support rather than relying on a prescribed list. Despite good psychometric properties, the SSQ and SSQ-6 demonstrate several limitations. First, the SSQ instructs individuals to cumulatively rate their satisfaction in an area of support from all members listed. Consequently, differences in the amount and types of support perceived from individual members of a social network are missed. Additionally, individuals are required to rate

their perceived support for items where they indicate they do not have support (Sarason et al., 1983). This is problematic, as subjects responding to a question that does not apply to them can lead to inaccurate conclusions for the specific types of support examined. Further, individuals may engage in socially desirable response patterns on these items, as the absence of support and a social network is considered deviant from societal standards (Krumpal, 2013; Van de Mortel, 2008; Zerbe & Paulhus, 1987). As a result, the desire to create a more favorable impression can lend to inaccuracies in responding.

Online Social Support Scale

The Online Social Support Scale (OSSS) is a recently created measure of social support comprised of 40 items that examine four specific types of social support (e.g., emotional/esteem support, informational support, instrumental support, and social companionship) that a person can experience via connections made online (Nick et al., 2018). Respondents are asked to rate the frequency in which they use a list of specific online communication systems (i.e., Facebook, Instagram, Reddit), as well as the option for respondent-defined systems to interact socially with others on a 5-point Likert scale, ranging from 0 = "Never" to 4 = "A lot". Respondents then rate the frequency in which specific support behaviors have occurred over the past two months (via the online platforms previously rated) on the same 5-point Likert scale (Nick et al., 2018). The OSSS is differentiated from prior measures of social support in that it examines online social support as opposed to in-person social support. As such, this measure makes a significant contribution to the study of social support as online social support can exhibit some of the same protective functions demonstrated by in-person support (Bosley, 2020; Cole et al., 2017; Shensa et al., 2020).

Exploratory factor analyses revealed a four-factor structure for the OSSS, which included

Esteem/Emotional Support, Social Companionship, Informational Support, and Instrumental

Support. Further, factor loadings for the four factors ranged from .55 to .74, lending strong

support to the four-factor model of online social support that resembles four types of in-person

social support (Nick et al., 2018). Additionally, the OSSS demonstrates adequate convergent,

discriminant, and construct validity (Nick et al., 2018). However, the measure presents several

limitations. First, the OSSS appears to measure received support over the past two-month period.

This may limit the scope of its clinical utility in determining whether an individual has an

adequate support network, in addition to findings that indicate perceived support as a better

predictor of psychological adjustment (Gülaçtı, 2010; Kaul & Lakey, 2003; Wethington &

Kessler, 1986). Additionally, construct validity of the OSSS was examined using depressive

symptomology endorsed on the Beck Depression Inventory – II (BDI-II), which may limit the

scope of interpretations derived from the measure (Nick et al., 2018). Finally, the specific online

social platforms listed in the OSSS leads to several issues. First, it may be burdensome and time

consuming to require respondents to rate the frequency in which they use the 24 listed platforms

in addition to the 40 support items, especially when considering that they may not utilize any of

the listed platforms. Secondly, several of the platforms listed, such as Vine, Yik Yak, and Google

+ are no longer supported interfaces, making components of the measure obsolete (Graham,

2017; Hern, 2019; Rogers, 2016).

Decades of research literature continue to support that the concept of social support is

multi-dimensional (Cohen & Hoberman, 1983). Further, social support remains an important

protective factor against maladaptive physical and psychological health outcomes, and the

assessment of social support remains a crucial step in predicting positive outcomes. However,

many of the measures of social support that are currently used present several theoretical and psychometric limitations (e.g., excluding potential sources of social support, inconsistent factor structures, discrepant validity). Many measures of social support employ a standardization sample of undergraduate students (Cohen & Hoberman, 1983; Cohen et al., 1985; Sarason et al., 1983; I. G. Sarason et al., 1987; Zimet et al., 1988). Further, most of these measures lack important information on the racial/ethnic demographic of their standardization samples, or have samples predominantly composed of White adults. Additionally, several of the most utilized measures of social support are antiquated and do not account for non-traditional sources of social support, such as online support or support received from organizations. Thus, development of a new measure of social support that attempts to remedy these issues is beneficial for both research and clinical utility.

Purpose

The purpose of the study was to develop and validate a measure of social support that assesses both the availability of sources of social support and an individual's level of satisfaction with those sources. Specifically, the study aimed to create a measure that accounts for diverse sources of social support, such as neighbors, coworkers, and online sources. The social support measure was also designed to assess an individual's perception of social support from these sources, and their perceived level of satisfaction. This measure is intended to capture a more adequate understanding of social support in a way that is culturally sensitive and updated to include modern sources of social support that are excluded from prior social support measures.

Hypothesis 1

The total score derived from the Perceived Social Support Inventory (PSSI) would demonstrate a moderate correlation to the Multidimensional Scale of Perceived Social Support (MSPSS) total score. This correlation will support the concurrent validity of the PSSI as a measure of perceived social support.

Hypothesis 2

The total score from the PSSI would demonstrate a moderate positive correlation to items on the Adult Coping Inventory (ACI) and the Brief COPE. This will provide a sound argument for the content validity of the PSSI as a measure of perceived social support, as there is significant support within the literature for the relationship between coping behaviors and social support (Coyne & Downey, 1991; Thoits, 1986; Tsai et al., 2012). Additionally, the total score of the PSSI would exhibit a negative correlation to the depression and anxiety scales of the Brief Symptom Inventory – 18 (BSI-18). This hypothesis is based on previous research findings that higher levels of perceived social support are negatively correlated with internalizing

psychological symptoms, such as depression and anxiety (Büyükkayacı Duman & Kocak, 2013; Collins et al., 1993; Patil et al., 2014; Sangalang & Gee, 2012).

Hypothesis 3

A confirmatory factor analysis of the PSSI would support the construct validity of the PSSI as a perceived social support measure. As such, goodness of fit statistics will further strengthen the validity of the PSSI.

Method and Results

Phase 1: Item Generation

Phase one consisted of generating items for the Perceived Social Support Inventory (PSSI), a measure intended to assess perceived social support in adults.

Procedure

An initial pool of 56 items was generated to assess social support from a variety of sources (e.g., friend, family, significant other, and group). Items were created based on a review of the literature, examination of existing social support scales, and consultation with experts in the field of clinical psychology. The 56 items consisted of content that evaluated various forms of perceived social support, including instrumental, informational, emotional, and appraisal support. These forms of social support were spread equally across social support sources. Each of the items included in the initial item pool were independently reviewed by seven advanced graduate students and one clinical psychology faculty member to ensure that items were easy to read and understand, and representative of the content in which they intended to measure.

Results

The initial pool of 56 items were independently evaluated for their clinical utility in assessing satisfaction of social support and different sources of social support present within an individual's social network. After independent review, items were eliminated due to redundancy and unclarity. Elimination of items resulted in 36 retained items of perceived social support for the initial measure of the Perceived Social Support Inventory Pilot (Appendix B). The pool of 36 items retained for the pilot measure were determined to measure instrumental, informational, appraisal, and emotional support received from family, significant other, friend, and a group.

Phase 2: Item Elimination

The purpose of this phase was to evaluate a pilot study of the PSSI in order to further refine the measure. This included the administration of the pilot version of the PSSI and removing items based on reliability estimates and factorial structure and validity.

Participants

The study recruited 355 participants, though 29 participants were eliminated due to incomplete data collection. Participants were comprised of 326 adults aged 18-65 residing in the United States and who primarily read and write in English. Participants were recruited from the online research platform Prolific, a research participant recruitment forum comprised of nationally representative samples. Prolific's research pool was selected due to their diverse pool of participants (Peer et al., 2017). Access to a diverse sample of participants is important in order to norm the measure on a group of racially and ethnically diverse individuals. All participants recruited from Prolific were compensated through monetary compensation.

Participants primarily identified as White (73.31%), with 8.28% of participants identifying as Hispanic or Latino, 8.28% of participants identifying as Asian, 7.67% of participants identifying as Black or African American, and 2.46% of participants identifying as Other. Genders of participants consisted of 50.62% female, 47.24% male, 1.23% non-binary, and 0.92% transgender. Additional participant demographic data is presented in Table 1.

Table 1. Demographic Data for Phase 2

	Frequency (N=326)	Percentage
Race		
White	239	73.31
Hispanic/Latino	27	8.28
Asian	27	8.28

(table cont'd)

	Frequency (N=326)	Percentage
Black/African American	25	7.67
Other	8	2.46
Ethnicity		
Hispanic/Latino	39	11.96
Not Hispanic/Latino	287	88.04
Gender		
Female	165	50.62
Male	154	47.24
Non-binary	4	1.23
Transgender	3	0.92
Age		
18-25	69	21.17
26-35	115	35.28
36-45	63	19.32
46-60	62	19.02
60-65	17	5.21

Measures

Measures for the second phase of the study included a measure of demographic variables and the Perceived Social Support Inventory – Pilot.

Demographics Questionnaire. Participants completed a demographics questionnaire, which collected data on participant race, ethnicity, gender, occupation, current employment status, annual household income, highest level of education, current place of residency (e.g., single-family home, transitional housing, etc.). See Appendix B for additional items.

Perceived Social Support Inventory – Pilot. Participants completed the pilot version of the Perceived Social Support Inventory, a measure intended to assess individual satisfaction for perceived social support from family, friend, significant other, and group sources. The sources of social support were defined to participants as: 1) friend: a close person with a shared bond; 2) family: a group of people or a person who is related to a person by birth, marriage, or adoption;

3) significant other: a person with whom someone shares a close romantic and/or sexual relationship; and 4) group: a collective group of two or more people who are connected by a shared interest, activity, religious affiliation, identity, etc. Items were rated on a 4-point Likert scale, ranging from 0 = "not at all true" to 3 = "very or always true".

Procedure

After receiving approval from the Institutional Review Board (IRB), participants completed the demographic questionnaire and Perceived Social Support Inventory – Pilot. Participants received a brief explanation of the study, and upon consent participants were directed to complete the demographic and social support pilot measure through Qualtrics.

Results

Item Elimination. Items from the Perceived Social Support Inventory – Pilot were examined and considered for elimination based on the following criteria:1) items are endorsed at a low frequency, defined as 40% or more of the sample indicating that an item is "not at all true"; and 2) the computed mean for an item is less than 1.00 (Boateng et al., 2018; Floyd & Widaman, 1995; Kline, 2005). These item characteristics are included in Table 2.

Item Frequency. Frequency of endorsement was computed for each item, with items endorsed "not at all true" by 40% or more of the sample considered for elimination. All items were retained based on this criterion.

Item Means. Item means were computed with items considered for elimination if computed means were less than 1.00. Examination of item means resulted in the retention of all 36 items.

Table 2. Item Characteristics of the Perceived Social Support Inventory – Pilot

Item	Mean	SD	Response Frequencies			
			Not at all true	A little or somewhat true	Mostly True	Very or Always True
I have a friend who I can trust	2.37	.83	15	30	103	184
I have a family member who appreciates my accomplishments	2.16	.96	25	54	96	157
My significant other will provide suggestions if I need help	1.94	1.23	78	29	58	167
I have a group who will help me to cope with stressors	1.84	1.03	42	80	100	110
My family would care for me if I'm sick or injured	2.34	.89	19	38	84	191
I have a friend who will provide good advice when I have a problem	2.27	.88	15	50	97	170
I have a significant other would care for me if I'm sick or injured	1.97	1.25	80	24	53	175
I have a group of people who I can trust	1.98	.98	29	76	98	129
My family will provide me with transportation if I need it	2.22	1.02	35	38	79	180
I have a friend who will provide me with assistance when I need it	2.13	.97	26	59	94	153
I have a significant other who will provide me with feedback, good or bad	1.98	1.22	75	23	63	171
I have a group who would care for me if I'm sick or injured	1.70	1.13	68	72	81	111
I have a friend who will provide me with transportation if I need it	1.90	.99	30	87	97	114
I have a family member who I can trust	2.31	.92	21	40	82	185
I have a group who appreciates my accomplishments	1.88	1.01	36	82	94	116
I have a significant other who will help me to cope with stressors	1.87	1.26	83	32	55	158
I have a friend who will provide suggestions when I need help	2.25	.88	26	37	103	162
My family will provide good advice when I have a problem	1.98	1.08	44	61	82	141
I have a significant other who appreciates my accomplishments	1.88	1.26	81	35	51	161

(table cont'd.)

Item	Mean	SD	Response Frequencies			
			Not at all true	A little or somewhat true	Mostly True	Very or Always True
I belong to a group of people who will provide me with assistance when I need it	1.80	1.04	40	94	84	110
I have a friend who will provide me with feedback, good or bad	2.22	.93	21	48	95	164
I have family who will provide suggestions if I need help	2.16	.97	27	49	96	156
I have a group of people who will provide good advice when I have a problem	1.94	1.02	38	67	100	123
I have a significant other who will provide me with assistance when I need it	1.95	1.27	79	31	42	176
I have a friend who will care for me if I'm sick or injured	1.72	1.08	55	81	89	101
I have family who will help me to cope with stressors	1.98	1.09	45	62	74	145
I belong to a group of people who will provide me with transportation if I need it	1.57	1.14	74	87	69	96
I have family who will provide me with feedback, good or bad	2.12	1.02	33	51	85	157
I have a significant other who I can trust	1.97	1.26	82	18	53	173
I have a friend who appreciates my accomplishments	2.17	.95	24	52	94	156
I belong to a group that will provide suggestions if I need help	1.97	1.00	31	76	92	127
I have a significant other who will provide good advice when I have a problem	1.91	1.27	82	30	49	165
I have a friend who will help me to cope with stressors	2.12	.97	26	59	92	149
I have family who will provide me with assistance when I need it	2.21	.97	27	45	85	169
I have a group of people who will provide me with feedback, good or bad	1.90	1.04	41	69	96	120
I have a significant other who will provide me with transportation if I need it	1.89	1.29	86	30	43	167

Exploratory Factor Analysis. The final 36 items were examined through SPSS using an exploratory factor analysis to determine the factor structure of the Perceived Social Support Inventory. Analysis consisted of a Promax oblique rotation due to the likelihood that items

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would demonstrate covariance (Tabachnick & Fidell, 2019). Eigenvalues were examined based on a cutoff criterion for values above 1.0 (Ledesma & Valero-Mora, 2007). This resulted in a four-factor solution, with four factors accounting for the majority of the variance at 80.68%.
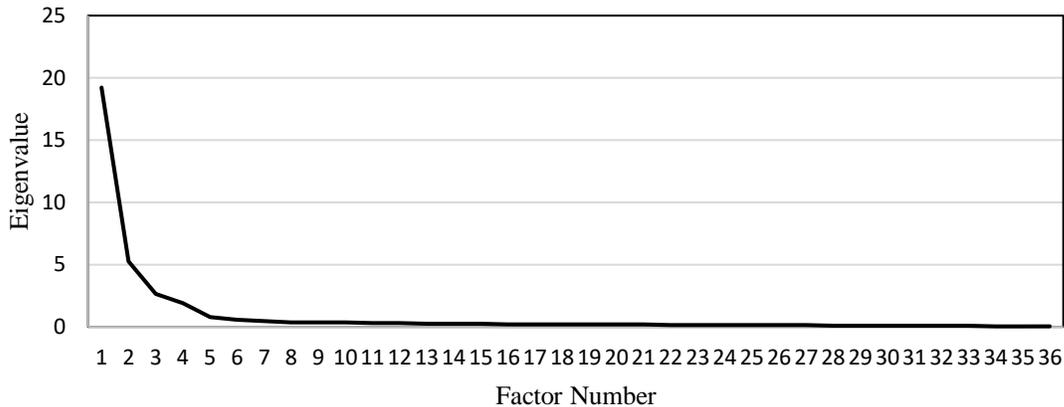

Figure 1. Scree Plot for Exploratory Factor Analysis

Analysis of the four factor solution revealed a model of four distinct factors with nine items per factor. Factor 1 represents Group as a source of social support, in which participants rate nine items of perceived social support for a personally defined group (i.e., church group, Facebook group, teammates). Items include statements such as "I belong to a group that will provide suggestions if I need help". Factor 2, Significant Other, is composed of 9 items aimed at examining perceived social support of a romantic partner (i.e., "I have a significant other who would care for me if I'm sick or injured"). Factor 3, Family, includes nine items that measure perceived social support from family members, such as "I have family who will provide suggestions if I need help". Factor 4, Friend, includes 9 items intent on measuring social support perceived from a friend (i.e., "I have a friend who appreciates my accomplishments"). Items were examined and retained if they exhibited factor loadings greater than .40 (Table 3). Each of the thirty-six initial items produced factor loadings greater than .40, with values ranging from .53 to .99, suggesting that the four-factor structure demonstrated parsimony (Comrey & Lee, 1992).

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Table 3. Factors and Factor Loadings

Items	Factor			
	1	2	3	4
I belong to a group that will provide suggestions if I need help	0.87			
I have a group who appreciates my accomplishments	0.85			
I belong to a group of people who will provide me with assistance when I need it	0.84			
I have a group of people who will provide me with feedback, good or bad	0.84			
I have a group who would care for me if I'm sick or injured	0.84			
I have a group who will help me to cope with stressors	0.83			
I belong to a group of people who will provide me with transportation if I need it	0.83			
I have a group of people who will provide good advice when I have a problem	0.81			
I have a group of people who I can trust	0.76			
I have a significant other would care for me if I'm sick or injured		-0.99		
I have a significant other who I can trust		-0.96		
My significant other will provide suggestions if I need help		-0.95		
I have a significant other who will provide me with assistance when I need it		-0.95		
I have a significant other who will help me to cope with stressors		-0.94		
I have a significant other who will provide good advice when I have a problem		-0.92		
I have a significant other who appreciates my accomplishments		-0.92		
I have a significant other who will provide me with feedback, good or bad		-0.92		
I have a significant other who will provide me with transportation if I need it		-0.91		
My family will provide good advice when I have a problem			0.94	
I have a family member who I can trust			0.89	
I have family who will help me to cope with stressors			0.87	
I have family who will provide me with assistance when I need it			0.86	
I have family who will provide me with feedback, good or bad			0.84	
My family would care for me if I'm sick or injured			0.79	
I have family who will provide suggestions if I need help			0.78	
I have a family member who appreciates my accomplishments			0.73	
My family will provide me with transportation if I need it			0.72	

(table cont'd)

Items	Factor			
	1	2	3	4
I have a friend who will provide suggestions when I need help				-0.93
I have a friend who will provide me with feedback, good or bad				-0.93
I have a friend who will help me to cope with stressors				-0.89
I have a friend who will provide good advice when I have a problem				-0.88
I have a friend who appreciates my accomplishments				-0.81
I have a friend who I can trust				-0.80
I have a friend who will provide me with assistance when I need it				-0.79
I have a friend who will provide me with transportation if I need it				-0.55
I have a friend who will care for me if I'm sick or injured				-0.53
Eigenvalue	19.22	5.25	2.66	1.90
% Variance	53.39	14.59	7.39	5.29

Note. Factor 1 = Group Support; Factor 2 = Significant Other Support; Factor 3 = Family Support; Factor 4 = Friend Support

Phase 3: Confirmatory Factor Analysis and Measure Validation

Phase three consisted of assessing the psychometric properties of scores obtained on the PSSI and confirmation of the factor structure determined in phase two of the study. This included a confirmatory factor analysis in addition to analyses of concurrent and content validity.

Participants

Participants for phase three of the study were recruited via Prolific and comprised of 318 adults aged 18-65 residing in the United States and who primarily read and write in English. All participants were compensated monetarily for their participation in the study. Participants primarily identified as White (74.84%), with 11.64% of participants identifying as Black or African American, 5.97% of participants identifying as Asian, 3.46% of participants identifying as Hispanic or Latino, 0.31% of participants identifying is Native Hawaiian/Pacific Islander, and 3.78% of participants identifying as Other. Genders of participants consisted of 64.15% female, 32.08% male, 3.46% non-binary, and 0.31% transgender. Additional demographic data is presented in Table 4.

Table 4. Demographic Data for Phase 3

	Frequency (N=318)	Percentage
Race		
White	238	74.84
Hispanic/Latino	11	3.46
Asian	19	5.97
Black/African American	37	11.64
Native Hawaiian/Pacific Islander	1	0.31
Other	12	3.78
Ethnicity		
Hispanic/Latino	27	8.50
Not Hispanic/Latino	291	91.50
Gender		
Female	204	64.15
Male	102	32.08
Non-binary	10	3.46
Transgender	1	0.31
Age		
18-25	64	20.13
26-35	94	29.56
36-45	70	22.01
46-60	70	22.01
60-65	20	6.29

Measures

Measures for phase three of the study included the demographics questionnaire from phase two, the revised version of the PSSI from phase two, a measure of perceived social support (Multidimensional Scale of Perceived Social Support; MSPSS), two measures of coping behaviors (Adult Coping Inventory, ACI; Brief COPE), and a measure of psychological distress (Brief Symptom Inventory – 18; BSI – 18).

Multidimensional Scale of Perceived Social Support. The Multidimensional Scale of Perceived Social Support (MSPSS; Zimet et al., 1988) is a self-report scale of perceived social support. The scale consists of 12 items rated on a 7-point Likert scale that ranging from 1 ("very

strongly disagree") to 7 ("very strongly agree"). The scale is interpreted by computing a total

score of the 12 items, with higher scores indicative of greater amounts of perceived social

support (Zimet et al., 1988). Additionally, the three subscales measure three distinct sources of

perceived support (e.g., family, friends, and significant other). Studies of the psychometric

properties of the MSPSS support excellent internal consistency for the Significant Other subscale

($\alpha = .91$), and good internal consistency for the Family ($\alpha = .87$) and Friends ($\alpha = .85$) subscales,

as well as the Total scale ($\alpha = .88$). Test-retest reliability of the MSPSS ranges from acceptable

to good for each of the three subscales and total scale score (Zimet et al., 1988). Further, the

MSPSS appears to be validated for use in a variety of diverse cultural and ethnic groups (Canty-

Mitchell & Zimet, 2000; Dambi et al., 2018).

Adult Coping Inventory. The Adult Coping Inventory (ACI) is a 57-item self-report

measure of individual coping strategies (Hollas, 2020). The ACI consists of 5 subscales: Problem

Solving, Mindfulness, Maladaptive Coping, Social Support, and Avoidance, in addition to a total

scale score. Items are rated on a Likert-scale ranging from 0 ("never") to 3 ("always). Higher

scores on the ACI are indicative of the presence of a larger number of positive coping

skills(Hollas, 2020). The ACI demonstrates excellent internal consistency for the full-scale total

score ($\alpha = .95$), and each of the five factors demonstrate reliability ranging from adequate to

excellent ($\alpha = .76$ to .92) (Hollas, 2020). The measure also significantly correlates to the

Depression, Anxiety and Stress Scale-21 and the Brief Resilience Scale, in addition to exhibiting

better predictive validity for maladaptive psychological outcomes than the Brief COPE (Hollas,

2020).

Brief COPE. The Brief COPE is a self-report questionnaire of coping behaviors that

consists of 28 items, measuring 14 different dimensions of coping behaviors (Carver, 1997). The

scales are as follow: Active coping, Planning, Suppression of competing activities, Restraint

coping, Seeking social support—instrumental, Seeking social support—emotional, Positive

reinterpretation & growth, Acceptance, Turning to religion, Focus on & venting of emotions,

Denial, Behavioral disengagement, Mental disengagement, and Alcohol-drug disengagement

(Carver, 1997). Items on the Brief COPE are rated on a 4-point Likert ("I haven't been doing this

at all" to "I've been doing this a lot"). Internal consistency for each of the 14 scales varies from

excellent to unacceptable (α = .50 to .90) (Carver, 1997).

Brief Symptom Inventory – 18. The Brief Symptom Inventory – 18 (BSI-18) is an 18-

item self-report measure for symptoms of psychological distress that is the shortened version of

the original 53-item Brief Symptom Inventory (Derogatis, 2001). Participants rate each item on a

5-point Likert scale ranging from 0 ("not at all") to 4 ("extremely"). The BSI-18 collects

information of a participant's symptomology across three scales, which include Depression,

Anxiety, and Somatization. Internal consistency is acceptable to good (α =.74 to .84) for all three

scales of the BSI-18 (Derogatis, 2001). The validity and reliability of the BSI-18 has been

extensively supported throughout the research literature, and the measure appears to be sensitive

to a variety of cultural and ethnic backgrounds (Galdón et al., 2008).

Perceived Social Support Inventory. Participants completed the revised version of the

Perceived Social Support Inventory (PSSI), which required participants to rate 36 items of

perceived social support on a 4-point Likert scale, ranging from 0 = "not at all true" to 3 = "very

or always true". Additionally, participants were asked to define the group that they would be

rating for each of the group items. These responses are summarized in Table 5.

Table 5. Participant Definitions for Group Items for the Perceived Social Support Inventory

	Frequency (N=318)	Percentage
Social Media		19.50
Facebook	40	
Discord	5	
Reddit	4	
Other	4	
Twitter	3	
Instagram	2	
WhatsApp	2	
Telegram	2	
Coworkers	53	16.67
Special Interest Group	45	14.15
Religious Community	35	11.01
Friend Group	20	6.29
Gaming Group	14	4.40
Sports Team	14	4.40
Classmates	14	4.40
Physical Activity Group	12	3.77
Other	12	3.77
Neighbors/Neighborhood	10	3.14
Parent/Caregiver Group	7	2.20
Professional Organization	5	1.57
Support Group	5	1.57
LGBT Community	4	1.26
Roommates	3	0.94
Family/Relatives	3	0.94

Procedure

After receiving approval from the Institutional Review Board (IRB), participants completed a demographic questionnaire, Multidimensional Scale of Perceived Social Support (MSPSS), Adult Coping Inventory (ACI), Brief COPE, Brief Symptom Inventory – 18 (BSI-18), and Perceived Social Support Inventory (PSSI), in addition to an attention check question to eliminate participants with suboptimal effort in responding. Participants received a brief explanation of the study, and upon consent were directed to complete the questionnaires online through Qualtrics. Structural validity of the PSSI was obtained through a confirmatory factor

analysis. The MSPSS was administered in an effort to determine the concurrent validity of the PSSI, as both measures attempt to measure perceived social support from an individual's social network. Further, participants completed the BSI-18 in order to determine the content validity of the PSSI based on the Anxiety (ANX) and Depression (DEP) scale scores. Content validity was also assessed by comparing total scale scores of the Brief COPE and the ACI to the total scale score of the PSSI.

Results of Phase Three

Hypothesis 1

  Concurrent Validity. The first hypothesis suggested that the Perceived Social Support Inventory (PSSI) would demonstrate moderately positive correlations with the Multidimensional Scale of Perceived Social Support (MSPSS), as both instruments attempt to measure perceived social support. A Pearson bivariate correlation was computed to examine the correlation between the total scores of the PSSI and MSPSS. Results indicated a significant positive correlation between the total score scales of the PSSI and MSPSS r(316) = .82, $p < .001$.

Hypothesis 2

  Content Validity: Coping. The second hypothesis proposed that the PSSI would be able to capture related concepts established within the research literature. Specifically, it was hypothesized that the PSSI would demonstrate moderate content validity by exhibiting a positive correlation to items on the Adult Coping Inventory (ACI) and the Brief COPE. To test this, items from the Avoidant Coping scale of the Brief COPE were reverse coded and entered into the total scale score. Results of a bivariate correlation found a moderate significant Pearson correlation r(311) = .36, $p < .001$ between the total score of the PSSI and the total score of the Brief COPE. Similar to the Brief COPE, nine items from the Maladaptive Coping subscale and two items from

the Avoidance subscale were reverse coded prior to summation into the total scale score of the ACI. Analysis of a bivariate correlation revealed a significant negative correlation r(311) = -.46, $p < .001$, indicating a moderate correlation between the ACI and PSSI.

Content Validity: Depression and Anxiety. The study also hypothesized that the PSSI would demonstrate a negative association between perceived social support and increased levels of anxiety and depressive symptoms. This hypothesis sought to establish the content validity of the PSSI as research suggests that individuals who report higher levels of anxiety and depression report decreased levels of perceived social support (Büyükkayacı Duman & Kocak, 2013; Collins et al., 1993; Patil et al., 2014; Sangalang & Gee, 2012). Pearson correlations for the Anxiety and Depression scales of the Brief Symptom Inventory – 18 (BSI-18) were each computed, with higher scores indicative of endorsement of increased anxious and depressive symptoms. A bivariate correlation was conducted between the PSSI total score and the Anxiety scale score of the BSI-18, resulting in a significant negative correlation between the two scores r(316) = -.33, $p < .001$, and the correlation between the PSSI total score and the Depression scale score of the BSI-18 also resulted in a significant correlation r(316) = -.52, $p < .001$.

Hypothesis 3

Confirmatory Factor Analysis. Confirmatory factor analyses were conducted using the Latent Variable Analysis package in R Statistical Software v4.2.0. Four alternative factor models were examined in accordance to recommended reporting guidelines (Jackson et al., 2009). The first analysis consisted of testing a single factor model composed of all items. A two factor model that included one factor containing items related to group support, and a second factor containing items related to friend, family, and significant other support was also tested. The three factor model tested was comprised of one factor including group support items, a second factor

containing family support items, and a third factor of combined significant other and friend

support items. Finally, the hypothesized four factor model was tested and compared to the

alternatively generated models. The factors included in the four-factor model analysis were

defined by the four factors that emerged from the exploratory factor analysis conducted in phase

two of the study (e.g., Factor 1: Group Support; Factor 2: Significant Other Support; Factor 3:

Family Support; Factor 4: Friend Support). Results from each of the four tested confirmatory

factor analyses are summarized in Table 6.

Table 6. Perceived Social Support Inventory Goodness of Fit Statistics

Model	χ^2	df	χ^2/df	RMSEA	RMSEA 90% CI	CFI	TLI	SRMR
One Factor	9035.41**	594	15.21	.21	.20-.21	.43	.40	.19
Two Factor	7100.26**	593	11.97	.19	.18-.19	.57	.54	.32
Three Factor	4668.78**	591	7.90	.15	.14-.15	.72	.71	.27
Four Factor	1582.73**	588	2.69	.07	.06-.07	.94	.93	.04

Note. RMSEA = root-mean-square error of approximation; CI = confidence interval; CFI = comparative fit index; TLI = Tucker Lewis index; SRMR = standardized root mean square residual
** $p < .00$

The unidimensional (single factor) model resulted in a chi-square value that was

significant ($\chi^2(594) = 9035.41$, $p < .000$), which indicated poor model fit, though this statistic is

sensitive to sample size (Byrne, 2013). Four fit indices were examined to determine the goodness

of fit, and results suggest poor fit for the single factor model structure based on suggested

thresholds for the root-mean-square error of approximation (RMSEA), comparative fit index

(CFI), Tucker Lewis index (TLI), and standardized root mean square residual (SRMR) indices

(Byrne, 1994; Kline, 2005). Similarly, examination of the four fit indices for the two factor

model ($\chi^2(593) = 7100.26$, $p < .000$) and three factor model ($\chi^2(591) = 4688.78$, $p < .000$) also

resulted in poor fit, though each model's fit improved in comparison to results from the

unidimensional model. The chi-square value for the four factor model was significant ($\chi^2(588) =$

1582.73, $p < .000$), and the RMSEA, CFI, TLI, and SRMR indices suggest acceptable to good fit for the four factor model structure. Additionally, the four factors each exhibited significant covariance with each other (Table 7).

Table 7. Covariance Between Factors for the Hypothesized Four Factor Model

	Group Support	Significant Other Support	Family Support	Friend Support
Group Support	1.00			
Significant Other Support	.31**	1.00		
Family Support	.60**	.41**	1.00	
Friend Support	.75**	.26**	.63**	1.00

** $p < .000$

Discussion

The role of social support as a mitigating factor against stress is well established within the research literature (Cohen & Wills, 1985; Taylor, 2011; Thoits, 1986; Uchino, 2009). As such, assessing perceived social support in individuals may provide important insight on protective factors that promote resilience for clinical and research purposes. There are presently several recognized measures designed to measure perceived social support, though many of the current measures of social support are outdated, limited in their psychometric properties, and exclude valuable sources of social support. The primary aim of the present study was to develop a new measure of perceived social support designed to capture a more adequate understanding of social support by including modern sources of support excluded from prior social support measures. The study additionally sought to create a measure based on a sample that more accurately represented minority populations based on current demographics of the general population. The initial 56 generated items were reviewed by a clinical psychology faculty member and graduate students, resulting in retention of 36 items that were included in the Perceived Social Support Inventory pilot measure. The second phase of the study consisted of administration of the pilot PSSI to determine further elimination of items based on pre-determined exclusion criteria (e.g., items endorsed by 40% or more of the sample as "never", item means less than 1.0, and factor loadings less than 0.4), in addition to determination of the factor structure of the PSSI through an exploratory factor analysis. The exploratory factor analysis resulted in retention of all 36 items of the pilot PSSI and established four subscales for the PSSI, which include Group Support, Significant Other Support, Family Support, and Friend Support.

The third phase of the study consisted of examination of the concurrent and content validity of the PSSI, in addition to a confirmatory factor analysis. Overall, results suggest acceptable to excellent concurrent and content validity for the Perceived Social Support Inventory. The PSSI demonstrated strong concurrent validity when tested against the MSPSS. Additionally, the results support good content validity for the PSSI based on the moderate positive association between adaptive coping behaviors on the Brief COPE and perceived social support on the PSSI, supporting the second hypothesis. Notably, the PSSI demonstrated a moderate negative association with adaptive coping behaviors on the ACI and perceived social support, which may be explained by differences in scores resulting from the additional dimensions of adaptive coping behaviors that are captured within the ACI. The content validity of the PSSI was also reflected in the significant moderate negative correlations between total scores on the PSSI and scale scores from the Anxiety and Depression scales from the Brief Symptom Inventory - 18. These negative correlations are consistent with prior research demonstrating the impact of social support as a buffer against depressive and anxious symptoms (Büyükkayacı Duman & Kocak, 2013; Dour et al., 2014). Confirmatory analyses for the unidimensional, two, three, and four factor models of the PSSI resulted in retention of the four factor model, as results suggest appropriate construct validity for the four factor model based on the acceptable to good model fit to the data. Overall, these results suggest that the Perceived Social Support Inventory demonstrates good validity and factorial structure, and may be an improvement on prior measures of social support with poor psychometric properties. This is especially important when considering the diverse demographic backgrounds captured wihtin the study sample, as it implies that this measure may be more representative of differing cultural backgrounds.

Limitations

The current study includes several limitations. First, test-retest reliability of the PSSI was not conducted, which could provide important insight on the stability of scale and total scores across time. Second, the study utilized a crowd-sourcing website to collect data in the second and third phases of the study, which may not be as representative of the general population given the resources required to complete the study (e.g., internet access and an electronic device for survey delivery). An additional limitation of the study is that the sample for the confirmatory analysis was composed of a larger proportion of female participants than in the second phase of the study, despite little change in the methodology of participant recruitment. One potential explanation may be that these differences are explained by the posted time requirements for each phase of the study, as the time requirement for phase three (i.e., 20 to 45 minutes) was much higher than phase two (i.e., 10 minutes). Finally, while many racial and ethnic minorities were recruited in each sample group, percentages were inconsistent with present population characteristics.

Future Directions

Future studies should consider testing the PSSI against the same group of people at two different time points in order to capture test-retest reliability to bolster support for the concurrent validity of the study. Additionally, validity of the individual scales of the PSSI should be tested in order to further refine the measure and build on the validity established in the present study. This may also be helpful in determining ways to address difficulties in interpretation of individual scale scores that result from participant responses when an individual does not have a social support source relevant to a scale item (i.e., the individual is considered a single adult and does not have a significant other). It is suggested that the third phase of the study is replicated in order to further refine the measure, as the high correlation coefficients between items is

suggestive that the measure can be shortened, which could prove to be highly beneficial when implemented in clinical settings. Finally, future research should seek to examine differences in reports of social support between individuals within specific socioeconomic statuses and racial/ethnic demographics, as this can help to inform the cultural sensitivity of the measure.

Conclusion

Based on results attained in this study, the initial validity of the Perceived Social Support Inventory is appropriate and suggests a psychometrically sound instrument for perceived social support. The measure also expands upon previous perceived social support measures by considering group support, which is important in more collectivistic cultures. Inclusion of a representative study sample demonstrates the PSSI's clinical and methodological utility in an increasingly diverse racially and ethnically diverse population. Overall, the Perceived Social Support Inventory exhibits appropriate psychometric properties and would benefit from further exploration of identified scale scores and measure refinement.

Appendix A.
IRB Approval Form

LSU | Office of
Research & Economic Development

TO:	Mary L Kelley LSUAM | Col of HSS | Psychology
FROM:	Alex Cohen Chairman, Institutional Review Board
DATE:	07-Feb-2022
RE:	IRBAM-22-0111
TITLE:	Development of a Measure of Social Support
SUBMISSION TYPE:	Initial Application
Review Type:	Exempt
Risk Factor:	Minimal
Review Date:	04-Feb-2022
Status:	Approved
Approval Date:	04-Feb-2022
Approval Expiration Date:	03-Feb-2025
Exempt Category:	2a
Requesting Waiver of Informed Consent:	Yes
Re-review frequency:	Three Years
Number of subjects approved:	600
LSU Proposal Number:	

By: Alex Cohen, Chairman

Continuing approval is CONDITIONAL on:

1. Adherence to the approved protocol, familiarity with, and adherence to the ethical standards of the Belmont Report, and LSU's Assurance of Compliance with DHHS regulations for the protection of human subjects*
2. Prior approval of a change in protocol, including revision of the consent documents or an increase in the number of subjects over that approved.
3. Obtaining renewed approval (or submittal of a termination report), prior to the approval expiration date, upon request by the IRB office (irrespective of when the project actually begins); notification of project termination.
4. Retention of documentation of informed consent and study records for at least 3 years after the study ends.
5. Continuing attention to the physical and psychological well-being and informed consent of the individual participants, including notification of new information that might affect consent.

6. A prompt report to the IRB of any adverse event affecting a participant potentially arising from the study.
7. Notification of the IRB of a serious compliance failure.
8. **SPECIAL NOTE: When emailing more than one recipient, make sure you use bcc. Approvals will automatically be closed by the IRB on the expiration date unless the PI requests a continuation.**

* All investigators and support staff have access to copies of the Belmont Report, LSU's Assurance with DHHS, DHHS (45 CFR 46) and FDA regulations governing use of human subjects, and other relevant documents in print in this office or on our World Wide Web site at http://www.lsu.edu/research

Louisiana State University   O 225-578-5833
131 David Boyd Hall   F 225-578-5983
Baton Rouge, LA 70803   http://www.lsu.edu/research

Appendix B.
Informed Consent for Research Participation

1. **Study Title:** Development of a Measure of Social Support

2. **Study Procedures/ Purpose of the Study:** The purpose of this project is to develop and validate the Perceived Social Support Inventory on a diverse adult population. This study will include a demographic questionnaire, two perceived social support measures, two coping measures, a questionnaire examining general psychological distress, and a questionnaire examining parenting practices. Sample questions include: "I have a friend who will help me to cope with stressors" and "I have a family member who appreciates my accomplishments". The survey will take approximately 10 to 45 minutes to complete.

3. **Inclusion Criteria:** Individuals who can read/write English, reside in the United States of America and are over 18 years old and below age 65 are eligible to participate.

4. **Exclusion Criteria:** Individuals are ineligible to participate if they are currently pregnant, unable to read/write English, reside outside of the United States of America, and/or are not within the ages of 18 and 65 years old.

5. **Risks/Discomforts:** There are no risks to participating in this study. This study is voluntary, and if participants feel distressed they are able to discontinue the study at any time.

6. **Investigators:** For questions regarding this study, investigators may be reached Monday – Friday 8 am – 5:00 pm CST by email or by phone at 225-578-4113:
      Lindsay Clark (lclar34@lsu.edu)
      Dr. Mary Lou Kelley, PhD (mkelley@lsu.edu)

7. **Participation is Voluntary/Right to Refuse:** Participation in this study is not mandatory and participants can withdraw from the study at any time. There are no penalties for discontinuing participation.

8. **Privacy:** All the information collected is solely for the purpose of research and will be kept private and confidential. Names or other identifying information will not be tied to responses and only trained research staff will handle the data. Once data collection is complete, the data will be analyzed, and a paper will be written. Names will not be associated with the paper and in publications that result from the data. Subject identity will remain confidential unless disclosure is required by law.

9. **Cost:** There is no cost participating in this study. Participants who complete this study online through Prolific will receive monetary compensation per each respective company's guidelines.

10. This study has been approved by the LSU IRB. For questions concerning participant rights, please contact the IRB Chair, Alex Cohen, at 225-578-8692 or irb@lsu.edu.

11. By continuing to this survey, you are giving consent to participate in this study.

Appendix C.
Demographics Questionnaire

1. Age:
   - 18-25
   - 26-35
   - 36-45
   - 46-60
   - 60+
2. Race:
   - American Indian or Alaska Native
   - Asian
   - Black or African American
   - Hispanic or Latino
   - Native Hawaiian or Other Pacific Islander
   - White
   - Other (Please specify): _____
3. Ethnicity:
   - Hispanic or Latino
   - Not Hispanic or Latino
4. Gender you identify as:
   - Male
   - Female
   - Transgender
   - Gender Fluid
   - Non-binary
   - Other identity (please state):_____
5. Marital Status:
   - Single, never married
   - Married
   - Separated
   - Widowed
   - Living with unmarried partner
6. Highest level of education:
   - Less than Junior High School
   - Junior High School (6th, 7th, 8th grade)
   - Some High School (9th, 10th, 11th, 12th grade)/ Did not Graduate
   - High School Graduate/GED
   - Some College (at least 1 year) or specialized training (Associate Degree)
   - Standard College Graduate (B.A., B.S.)
   - Post-College Advanced Degree (Masters or Doctorate)

7. Employment Status:
    - Unemployed
    - Stay-at-home parent
    - Employed
8. (If "Employed" is selected in question #7)
    - Please state your occupation: _____
9. Are you currently enrolled in college?
    - No
    - Yes – 1st year
    - Yes – 2nd year
    - Yes – 3rd year
    - Yes – 4th year
    - Yes – 5th year or higher
    - Yes – Post-Graduate Student
10. Current annual household income:
    - $0-$24,999
    - $25,000 – $49,999
    - $50,000 – $99,999
    - Over $100,000
11. Religious Affiliation
    - Buddhist
    - Christian
    - Hindu
    - Jewish
    - Muslim
    - Other (Please specify:) _____
    - None
12. Current place of residency
    - Single-family home
    - Multi-family unit
    - University housing
    - Transitional housing
    - Houseless
    - Other

Appendix D.
Perceived Social Support Inventory – Pilot Version

Instructions: Please read each of the following questions and select the response that best represents how you feel about the following relationships. The relationships are defined as: 1) friend: a close person with a shared bond; 2) family: a group of people or a person who is related to a person by birth, marriage, or adoption; 3) significant other: a person with whom someone shares a close romantic and/or sexual relationship; and 4) group: a collective group of two or more people who are connected by a shared interest, activity, religious affiliation, identity, etc.

In the box below, define the group that you will be rating (example: Facebook community, church group, basketball team, etc.). Note: Your group should NOT be defined as family, significant other, or a friend as these will be rated separately. Only define one group that you will rate for the group items: _____

Select a response from the following responses:
0 = Not at all true
1 = A little or somewhat true
2 = Mostly true
3 = Very or always true

1. I have a friend who I can trust
2. I have a friend who will care for me if I'm sick or injured
3. I have a friend who appreciates my accomplishments
4. I have a friend who will provide good advice when I have a problem
5. I have a friend who will provide suggestions when I need help
6. I have a friend who will provide me with assistance when I need it
7. I have a friend who will help me to cope with stressors
8. I have a friend who will provide me with feedback, good or bad
9. I have a friend who will provide me with transportation if I need it
10. I have a family member who I can trust
11. My family would care for me if I'm sick or injured
12. I have a family member who appreciates my accomplishments
13. My family will provide good advice when I have a problem
14. I have family who will provide suggestions if I need help
15. I have family who will provide me with assistance when I need it
16. I have family who will help me to cope with stressors
17. I have family who will provide me with feedback, good or bad
18. My family will provide me with transportation if I need it
19. I have a significant other who I can trust
20. I have a significant other would care for me if I'm sick or injured
21. I have a significant other who appreciates my accomplishments
22. I have a significant other who will provide good advice when I have a problem
23. My significant other will provide suggestions if I need help
24. I have a significant other who will provide me with assistance when I need it
25. I have a significant other who will help me to cope with stressors

26. I have a significant other who will provide me with feedback, good or bad
27. I have a significant other who will provide me with transportation if I need it
28. I have a group of people who I can trust
29. I have a group who would care for me if I'm sick or injured
30. I have a group who appreciates my accomplishments
31. I have a group of people who will provide good advice when I have a problem
32. I belong to a group that will provide suggestions if I need help
33. I have a group who will help me to cope with stressors
34. I belong to a group of people who will provide me with assistance when I need it
35. I have a group of people who will provide me with feedback, good or bad
36. I belong to a group of people who will provide me with transportation if I need it

Appendix E.
Multidimensional Scale of Perceived Social Support

Instructions: We are interested in how you feel about the following statements. Read each statement carefully. Indicate how you feel about each statement by selecting the following responses:

1 = Very Strongly Disagree
2 = Strongly Disagree
3 = Mildly Disagree
4 = Neutral
5 = Mildly Agree
6 = Strongly Agree
7 = Very Strongly Agree

1. There is a special person who is around when I am in need.
2. There is a special person with whom I can share joys and sorrows.
3. My family really tries to help me.
4. I get the emotional help & support I need from my family.
5. I have a special person who is a real source of comfort to me.
6. My friends really try to help me.
7. I can count on my friends when things go wrong.
8. I can talk about my problems with my family.
9. I have friends with whom I can share my joys and sorrows.
10. There is a special person in my life who cares about my feelings.
11. My family is willing to help me make decisions.
12. I can talk about my problems with my friends.

Appendix F.
Brief COPE

These items deal with ways you've been coping with the stress in your life. There are many ways to try to deal with problems. These items ask what you usually do to cope. Obviously, different people deal with things in different ways, but I'm interested in how you've tried to deal with it. Each item says something about a particular way of coping. I want to know to what extent you've been doing what the item says. How much or how frequently. Don't answer on the basis of whether it seems to be working or not—just whether or not you're doing it. Use these response choices. Try to rate each item separately in your mind from the others. Make your answers as true FOR YOU as you can.
1 = I haven't been doing this at all
2 = I've been doing this a little bit
3 = I've been doing this a medium amount
4 = I've been doing this a lot

1. I've been turning to work or other activities to take my mind off things.
2. I've been concentrating my efforts on doing something about the situation I'm in.
3. I've been saying to myself "this isn't real.".
4. I've been using alcohol or other drugs to make myself feel better.
5. I've been getting emotional support from others.
6. I've been giving up trying to deal with it.
7. I've been taking action to try to make the situation better.
8. I've been refusing to believe that it has happened.
9. I've been saying things to let my unpleasant feelings escape.
10. I've been getting help and advice from other people.
11. I've been using alcohol or other drugs to help me get through it.
12. I've been trying to see it in a different light, to make it seem more positive.
13. I've been criticizing myself.
14. I've been trying to come up with a strategy about what to do.
15. I've been getting comfort and understanding from someone.
16. I've been giving up the attempt to cope.
17. I've been looking for something good in what is happening.
18. I've been making jokes about it.
19. I've been doing something to think about it less, such as going to movies, watching TV, reading, daydreaming, sleeping, or shopping.
20. I've been accepting the reality of the fact that it has happened.
21. I've been expressing my negative feelings.
22. I've been trying to find comfort in my religion or spiritual beliefs.
23. I've been trying to get advice or help from other people about what to do. 24. I've been learning to live with it.
25. I've been thinking hard about what steps to take.
26. I've been blaming myself for things that happened.
27. I've been praying or meditating.
28. I've been making fun of the situation.

Appendix G.
Adult Coping Inventory

This next set of questions asks about the coping methods you use in your life. There are no right or wrong answers. Answer the questions based on what you do, not if the coping strategy helps or not.

When you are stressed, how frequently are you using the following coping strategies:
0 = Most of the time
1 = Some of the time
2 = Seldom
3 = Never

1. Take a walk
2. Take a bath or shower
3. Avoid stressful situations
4. Ask for help
5. Identify irrational beliefs
6. Talk to someone about what is bothering me
7. Feeling shame/guilt
8. Think back to past situations for solutions
9. Take quiet time to myself
10. Chat with someone online about what is bothering me
11. Go over and over the situation in mind
12. Engage in positive self-talk
13. Engage in a social activity
14. If my initial solution, doesn't work, choose a different solution and try it
15. Identify the problem
16. Listen to music
17. Practice a skill or hobby
18. Reward myself for successfully using a solution
19. Take my frustration out on myself
20. Easily annoyed by others
21. Visualize myself somewhere peaceful
22. Clean my house
23. Avoiding other people
24. Commit to engage in something meaningful and important everyday
25. Talk to a friend about the problem
26. Evaluate the possible outcomes of the situation
27. Checking the facts of the situation
28. Exercise
29. Venting my emotions
30. Plan to use the highest rated solution
31. Stop and think about my response
32. Do something nice for someone else
33. Pretend I am in other person's shoes

34. Practice deep breathing
35. Consume a healthy diet
36. Determine whether there is another way to look at the situation
37. Visualize a place I enjoy
38. Avoid people or situations that are upsetting
39. Seek information online about the situation
40. Stretch my muscles
41. Seek reassurance from others
42. Brainstorm all possible solutions
43. Rate how effective each solution is
44. Talk to someone about my feelings around what is bothering me
45. Do something creative (i.e., paint, arts and crafts)
46. Leave stressful situation
47. Take my frustration out on others
48. Engage in an activity by myself
49. Blame others for the situation
50. Assess the outcome after I used the solution
51. Nonjudgmentally accepting the experience
52. Blame myself for the situation
53. Feeling ignored, criticized, or rejected
54. Read a book
55. Dwell on the worst outcome
56. Talk to someone about something positive
57. Talk about the experience

Appendix H.
Attention Check Question

Which of the following listed foods is your favorite food to eat? This is a data quality check. Please select the response Pizza regardless of which food is your true preference.

a. Melon
b. Steak
c. Pizza
d. Bagels

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Vita

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