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Abstract

This study was designed to determine whether the need for social support moderates the relationship between social support (both perceived and enacted) and depression, anxiety, and stress. The study tested the role of Need for Support in the context of both buffering and direct effect models of the effect of social support on mental health and well-being. If perceived availability of social support (i.e., PASS) had a direct effect on well-being, then a simple moderation was predicted. If a buffering effect was present, then a moderated moderation was predicted. This study also predicted a positive relationship between need for social support and extraversion, and that women would have higher levels of need for social support than men.

Results indicated that the perceived availability of social support was moderately negatively correlated with depression, anxiety and stress and positively correlated with extraversion. Enacted support (i.e., ISSB) was not found to be correlated with the outcome variables. Need for Support was found to be positively correlated with both PASS and enacted support. Women had higher scores than men on all main variables but this effect was only significant for the daily hassles score. Need for Support was not found to be significant in moderating the relationship between perceived availability of social support and the outcome variables. This finding could be due to Need for Support not being reliably measured ($\alpha = 0.64$). Furthermore, the current study's small sample size provided low power to detect significant interactions.

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**Does Need for Social Support Moderate the Relationship between Perceived Availability of
Social Support and Depression, Anxiety, and Stress?**

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Fall 2023

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Table of Contents

Introduction	5
The Nature of Social Support	5
Social Support and Mental Health	6
Buffering Hypothesis	7
Direct Effects Hypothesis	8
Need for Social Support	9
Extraversion and Social Support	10
Gender and Social Support	11
Current Study	12
Methods	14
Participants	14
Measures	15
Procedure	18
Results	19
Correlations	19
Gender Comparisons	21
PROCESS Analysis	21
Discussion	27
References	32
Appendix	42

Does Need for Social Support Moderate the Relationship between Perceived Availability of Social Support and Depression, Anxiety, and Stress?

Social support has long been seen to play a central role in the maintenance of both mental health and physical health. Various aspects of social support are correlated with a wide variety of mental and physical health outcomes (for reviews, see Chu et al., 2010; Gariépy et al., 2016). The current research hypothesizes an individual difference variable, Need for Support, which moderates the relationship between social support and health and well-being.

The Nature of Social Support

Social support refers to assistance people receive from other people in their lives. However, social support is a complex construct, and a wide literature has developed to elucidate the multiple aspects of social support (e.g., Cohen & Syme, 1985; Haber et al., 2007; Sarason & Sarason, 2009; Turner, 1992; Wortman & Dunkel-Schetter, 1987). One way in which the construct of social support has been differentiated is to identify different structural aspects of support and different functional aspects of support: structure and function. Structure is the form social support takes. It is “the scaffold from which potential support and resources originate” (Chronister, 2019, p. 233). The structure of social support includes a person’s social network: The number of people to whom the individual is socially connected.

Another dimension upon which one can examine different aspects of social support is function. Chronister (2019) defined function as the type and quality of supportive behaviors. Some common functions of social support in the literature include emotional support, tangible support, informational support, and companionship support. Emotional support refers to behaviors that make others feel that they are valued and loved through empathy, concern, love, trust, and affection (Bloom, 1982; Cobb, 1976; Slevin et al., 1996). Tangible support is support

through concrete, direct means such as financial assistance, services, or material goods (Heaney & Israel, 2008; House, 1981). Informational support is the provision of guidance, advice, and suggestions (Wang et al., 2012). Companionship support can be defined as receiving help from partners and working together (Chogahara, 1999).

Another important distinction regarding social support is between the perceived availability of social support (PASS) and received (enacted) social support (Barrera, 1986; Taylor, 2011). Perceived availability of social support is people's belief in how much social support they have available if they need support (Barrera, 1986). Conversely, received support is support that people actually get from others when they are in need (Barrera, 1986). Most research shows that perceived availability is most strongly related to mental and physical health and well-being compared to received social support (Haber et al., 2007).¹

Social Support and Mental Health: Buffering or Direct Effects.

There are two main models to explain the effect social support has on physical and

¹ For practical reasons, received support is rarely directly measured. Rather, researchers ask participants to report their subjective sense of how much support they received. Therefore, this type of measure could be more accurately referred to as perceived support (or perceived enacted support). Confusingly, many researchers in fact use the term received support to refer to this aspect of support, with the term perceived support referring to the perceived availability of support. I attempted to avoid this confusion. In this study, I asked participants both about their perception of the amount of support they currently have available in their lives (which I refer to as the perceived availability of social support; PASS) and also of their subjective assessment of how much support they actually received.

mental health – the buffering hypothesis and the direct effects hypothesis (Cohen & Wills, 1985). Social support is always beneficial per the direct effects hypothesis, whereas the buffering hypothesis predicts social support is most beneficial during stressful life events. Both hypotheses have evidence to support their claims (for reviews, see Cohen & Wills, 1985; Taylor, 2011; Uchino, 2009)

Buffering Hypothesis

The buffering hypothesis claims that social support protects (i.e., “buffers”) people from negative effects of stressful life events like the death of a loved one, job loss, or acquiring a serious health condition (Cohen & Wills, 1985). The correlation between poor health and negative life events was weaker in people with high perceived availability of social support, compared to those with lower levels perceived availability of social support. In other words, high amounts of social support can protect people from stress (Cohen & Wills, 1985).

There is a considerable amount of evidence supporting the buffering hypothesis. For example, Frederick et al. (2018) found that PASS from parents, classmates, close friends (for girls only), and teachers buffered the effect of depression on suicidal ideation among a sample of U.S. 9th grade students. High depression students who reported higher available support from each group reported less suicidal ideation than did high depression students with lower levels of PASS. Social support level had little to no effect on the amount of suicidal ideation among low depression students

Wiesmaierova et al. (2019) measured stressful events, PASS, and depressive symptoms in a group of Spanish patients hospitalized with acute coronary syndrome. They found that PASS buffered the effects of negative stress on depressive symptoms. Patients with low amounts of

PASS reported more depressive symptoms the more stressful life events they reported. Stress was not related to depression among patients with higher levels of PASS.

Similarly, Szkody and McKinney (2020) measured PASS, negative life events, and physical and psychological health in U.S. undergraduate students. They found that PASS moderated the relationship between negative life events and both physical and psychological health (although only for women). When women perceived having a low amount of available social support and experienced a high number of negative life events, then both physical and psychological health were worse compared to women who had a low perceived level of social support and experienced fewer negative life events. Health did not decrease as a function of negative life events among women who had high PASS.

Direct Effects Hypothesis

The direct effects hypothesis posits that people with high availability of social support are healthier overall than people with a low amount of available social support – regardless of their stress level (Cohen & Wills, 1985). Demakis and McAdams (1994) found that perceived availability of social support had direct effects on mental and physical well-being in a sample of U.S. college students. Students who perceived having a high level of available social support reported feeling less psychologically distressed and more satisfied with life. There were no significant interaction effects between perceived availability of social support and stress.

Hitlan (2020) found that perceived availability of social support from significant others directly affected men's psychological distress. When men had perceived more available social support from significant others, they experienced less psychological distress.

As previously discussed, Szkody and McKinney (2020) found a significant interaction between PASS and the number of negative life events in its effect on both physical and

psychological health among women. However, there remained fairly substantial direct positive effects of PASS on health for both men and women even when the interaction was included in the models.

Need for Social Support

As discussed, the buffering hypothesis suggests that social support is particularly helpful when people are under greater levels of stress. In other words, the hypothesis proposes that social support is needed more in some situations (i.e., high stress) than in others (low stress); however, researchers have only recently begun to explicitly conceptualize differences in how much support is needed.

Rankin et al. (2018) found that U.S. college students reported more depressive symptoms when there was a large difference between their subjectively reported social support needs and their reports of received social support. Not surprisingly, when need for support outweighed the amount of support received, depressive symptoms were high; however, it was also possible to get too much support. People reported having more depressive symptoms when they had more received social support than they thought they needed, compared to people who thought their perceived need for social support matched the amount of social support they received. (These findings were not found with anxiety as the outcome variable.)

One possible interpretation of these findings is that there is situational variation in how much people need social support, and the match or mismatch between needed support and received support is based on those actual differing needs. However, given that the need for support variable used by Rankin et al. (2018) was based on the participants' subjective assessment of need, another interpretation is that the differing needs are a result of individuals' subjective sense of how much support is needed.

In other words, there might be some people who do not perceive as high a need for social support as others because they prefer to deal with their stress in other ways (e.g., internally). I propose that there may be variation in how much support people feel they need. Two people who (perceived) they were receiving or had available the same amount of support might differ in how they respond to that support because they differ in Need for Support (NfS) levels.

Extraversion and Social Support

Extraversion is one factor that could affect different levels of need for support. Numerous studies have shown a positive relationship between PASS and extraversion (Allemand et al., 2015; Ayub, 2015; Barańczuk, 2019; Chay, 1993; Clark et al., 2019; Cukrowicz et al., 2018; Demakis & McAdams, 1994; Duckitt, 1984; Dumitrache et al., 2018; Ekşi, 2010; Emery et al., 1996; Fyrand et al., 1997; Gosztyła & Prokopiak, 2019; Halamandaris & Power, 1997; Hill et al., 2018; Ibrahim et al., 2015; Kamenov et al., 2016; see Emery et al. 1996 for an exception), and there is evidence that PASS mediates the relationship between extraversion and life satisfaction (e.g., Dumitrache et al., 2018)

More importantly for my purposes, there is evidence that those higher in extraversion are more likely to seek out social support. Tkach and Lyubomirsky (2006) found that people who scored high in extraversion were more likely to report using social affiliation as a means of achieving happiness. Ekşi (2010) found that Turkish college students who were high in extraversion were more likely to seek out social support as a form of coping compared to people who scored low in extraversion.

Cukrowicz et al. (2008) suggested that people who scored high on extraversion were less likely to withdraw from social supports than people who scored low on extraversion. They found that people who scored high on extraversion reported increased or stable levels of availability of

social support over the course of their three-year study, while those low in extraversion reported availability of social support declined slightly over the course of the study. This further points to the possibility that extraverts value social support more than non-extraverts.

Hill et al. (2018) found that people who scored high on extraversion also tended to report having more positive social support and less negative social support (i.e., support that is unwanted or support that makes the recipient uncomfortable and potentially causes stress). In other words, those lower in extraversion may be more likely to find social support unwanted.

These findings raise the possibility that extraverts want or require more social interaction (and therefore more social support). People lower in extraversion might require less support to deal with their stress and to be happy. Thus, for introverts, greater social support may not buffer against the negative effects of stressful life events on anxiety and depression. In fact, consistent with the findings of Rankin et al. (2018), having more support than one feels they need may even create negative effects.

Gender and Social Support

Another variable that may be related to NfS is gender. As evidenced in some of the studies in the buffering hypothesis and direct effects hypothesis sections (Hitlan, 2020; Szkody & McKinney, 2020), social support more consistently affected outcomes for girls and women. Perhaps, women and girls have a higher need for social support and seek out social support more than men and boys do.

Furthermore, Szkody et al. (2021) researched the interactional effects gender and race had on both perceived and received social support on new U.S. college students. Social support was broken down into instrumental, informational, and emotional support. There were no significant gender differences in PASS from fathers. On the other hand, women reported more

PASS on all support types from friends and from their mothers (although the gender effect was not significant for maternal instrumental support). Results were less consistent for received support; men generally reported receiving more support from fathers than did women, while women reported greater received support from their mothers and their friends – although not all these effects were statistically significant.

Numerous studies (e.g., Eschenbeck et al., 2007; Felsten, 1998; Jenzer et al., 2019) have shown that females are more likely to seek social support than males. Jenzer et al. (2019), for example, examined the effects of temperament and gender on coping strategies in young adulthood in the U.S. in a four-year longitudinal study. At baseline, females sought social support more than males; and, over time, males would seek out social support less and less than females. Tamres et al. (2002) conducted a meta-analysis of gender differences in coping strategies. While almost all of the 17 coping strategies examined were more frequently used by women, seeking emotional support had the greatest estimated effect size; seeking instrumental support and seeking support (non-specified) also were preferred by women relative to men.

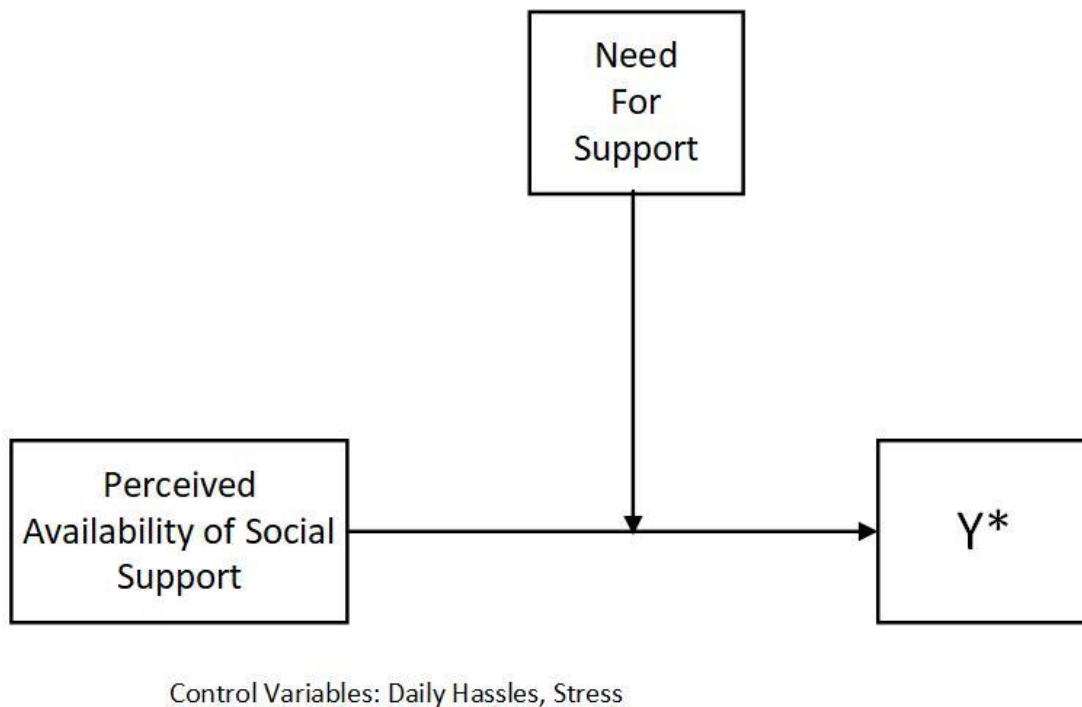
As with extraversion, where we argued that the greater tendency to seek out social support may reflect greater need for support, a similar hypothesis can be made about gender. It is possible that females have a greater need for social support.

Current Study

As I argued above, evidence for the buffering hypothesis can be interpreted as proposing situational variations in the need for social support. I proposed that there is likewise individual difference in need for support. Thus, the current study asked whether different people need different levels of social support. I was agnostic as to whether our findings would conform to

predictions of a buffering effect or of a direct effects model. As a result, I tested both possibilities.

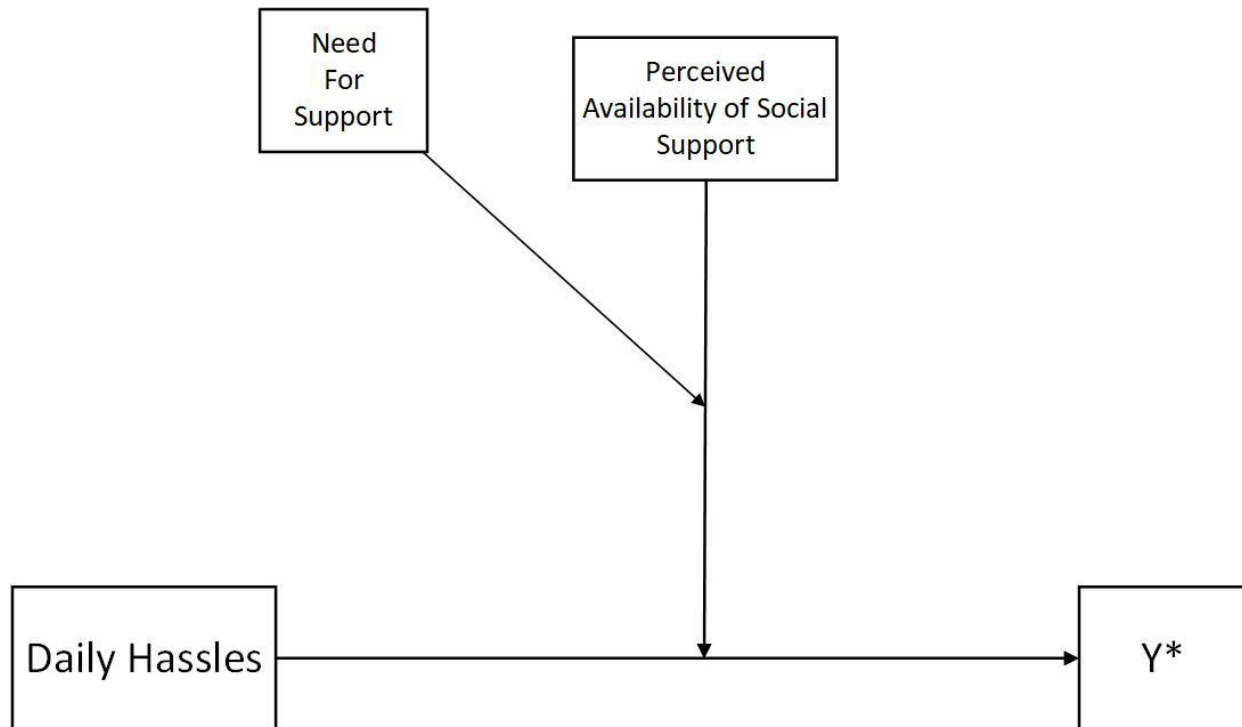
If PASS had a direct effect on well-being, then I predicted a simple moderation model (Figure 1). For those with a greater NfS, PASS would be negatively correlated with Depression, Anxiety, and Stress; however, this relationship would not be present for those with low levels of NfS.



*- Separate models will be estimated with Depression & with Anxiety as outcome variables.

On the other hand, if a buffering effect was in play, then I predicted a moderated moderation model (see Figure 2). Among people with high NfS, I expected the standard buffering effect to occur: PASS would moderate the relationship between Daily Hassles and Depression, Anxiety, and Stress, such that there would be a stronger positive relationship between Hassles and each of the outcome variables (Depression, Anxiety, Stress) for those with

lower PASS than for those with higher PASS. On the other hand, among people with lower levels of NfS, PASS should not have affected the relationship between Daily Hassles and Depression, Anxiety and Stress.



*- Separate models will be estimated with Depression, with Anxiety, and with Stress as outcome variables.

Finally, I predicted a positive relationship between NfS and Extraversion. I also predicted that women would have a higher level of NfS.

Methods

Participants

The sample consisted of 119 undergraduate students enrolled in introductory psychology classes at Eastern Illinois University who completed the study in exchange for research participation credit in their class. Participants signed up for the study online using Eastern

Illinois University's SONA System (the standard system for recruiting research pool participants).

Twenty-five participants (17.4%) identified as male, 86 (72.3%) as female, 4 (2.8%) as non-binary and 3 (2.1%) as agender. One participant indicated their gender identity as trans-masculine. Sixty-nine participants identified as white (47.9%), 30 participants identified as Black/African American (20.8%), 5 identified as Asian (3.5%) and another 5 identified as multiracial (3.5%). Nine identified as Latino (6.3%), and 1 person identified as "Other." The majority of participants were between 18 and 23 years old; two participants were older (28 and 30 years old). The average age of all participants for this study was 19.08 years old ($Mdn = 19.00$, $SD = 1.7$).

Measures

Participants completed six self-report questionnaires to measure the perceived availability of social support, received (enacted) support, need for support, depression, anxiety, stress, extraversion, and daily hassles.

Late Adolescent Social Support Inventory

The first measure used was the Late Adolescent Social Support Inventory (LASSI; Scher, et al., 2023), which is a 36-item inventory designed to measure PASS in high school and college student samples. Items were derived representing House's (1981) four types of social support: appraisal, informational, emotional, and instrumental. Ratings were based on a five-point Likert scale asking about the frequency of available support. Scale points are labelled as "Never," "Rarely," "Sometimes," "Often," and "Very Often." (Complete versions of all scales appear in the Appendix).

Scher et al.'s (2023) studies using the LASSI have consistently obtained very high estimates of internal consistency reliabilities (α 's and ω 's > 0.95). They also found that LASSI scores are correlated with Cohen et al.'s (1985) 21 item version of the Interpersonal Support Evaluation, demonstrating convergent validity. Evidence of criterion-related validity comes from correlations with the Satisfaction with Life Scale (Diener et al., 1985), with scores on all three subscales of the Depression, Anxiety, and Stress Scale – 21 Items (DASS-21; Lovibond & Lovibond, 1995), scores on the Center for Epidemiological Studies Depression Scale, Revised (Eaton et al., 2004), and scores on the Perceived Stress Scale (Cohen et al., 1983).

Need for Support Scale

The Need for Support (NfS) Scale was created for this study to assess people's trait-level beliefs about their need or preference for social support. The scale contains nine items: three items to measure NfS in each of three domains: emotional support, informational support, and tangible support. One item in each domain is reverse scored. Questions were rated on a 7-point Likert scale with the following options: "Strongly Agree," "Agree," "Somewhat Agree," "Neither Agree Nor Disagree," "Somewhat Disagree," "Disagree," and "Strongly Disagree." An example related to emotional support is "When I have a hard day, it helps me to talk it over with a friend or family member." An example related to informational support is, "I like to figure out my problems on my own, rather than rely on friends and/or family members to give me advice" (reverse-scored). Finally, an example related to tangible support is, "If I have an important financial need, I don't mind borrowing money from a friend or family member." (See Appendix).

Depression, Anxiety, and Stress Scale – 21 Items (DASS-21)

The next measure in the study is the Depression, Anxiety, and Stress Scale – 21 Items (DASS-21; Lovibond & Lovibond, 1995), which is a self-report assessment that includes three subscales measuring depression, anxiety, and stress. Each subscale was seven items. Items ask participants to answer how much a statement applies to them over the past week regarding depression, anxiety, and stress symptoms. Questions were rated on a 4-point Likert scale with the options as follows: “Did not apply to me at all,” “Applied to me to some degree, or some of the time,” “Applied to me a considerable degree or good part of time,” and “Applied to me very much or most of the time.” Lovibond and Lovibond (1995) found alpha coefficients for internal consistencies to be 0.91 for depression, 0.84 for anxiety, and 0.90 for stress. (See Appendix).

International Personality Item Pool Extraversion Scale

Extraversion was measured with 10 items from the International Personality Item Pool (IPIP-E: International Personality Item Pool, n.d.). These items were selected by the IPIP creators to represent Costa and McCrae’s (1992) extraversion scale from the Neuroticism Extraversion Openness Personality Inventory Revised. There are an equal number of positive and negative keyed items. The self-report measure used a 5-point Likert scale with the following options: “Very Inaccurate,” “Moderately Inaccurate,” “Neither Inaccurate nor Accurate,” “Moderately Accurate,” and “Very Accurate.” For positive keyed items, “Very Inaccurate” was assigned a value of 1, while “Very Accurate” was assigned a value of 5. For the negative keyed items, “Very Inaccurate” was given a value of 5, whereas “Very Accurate” was given a value of 1. The International Item Pool Website reported an alpha reliability of 0.86 for this version of the scale and a correlation of 0.77 with the Extraversion scale of the Neuroticism Extraversion Openness Personality Inventory Revised. (See Appendix).

Life Events and Daily Hassles Scales

The fifth measure is the Background Stress Inventory (BSI) created by Terrill et al. (2015). The self-report measure used a 9-point Likert scale (1 = no stress; 9 = extreme distress). It measures distress over everyday life issues over both the past month and for most of the past year. Participants were asked how much stress they currently experience from the various examples given. There are 25 items that cover five domains: financial, occupation/education, environment, health, and social. Cronbach's alpha was .89 for the overall scale and > 0.70 for each individual domain (Terrill et al., 2015). In terms of construct validity, the BSI was significantly correlated with daily hassles (0.41) and measures a construct that is different enough from perceived stress and daily hassles (Terrill et al., 2015).

Inventory of Socially Supportive Behaviors

The final measure is the Inventory of Socially Supportive Behaviors (ISSB; Barrera et al., 1981), which is a self-report assessment designed to measure received support (as perceived subjectively by the respondents). It contains 40 items and uses a 5-point Likert scale (1 = not at all; 5 = about every day). It was used to measure the frequency people received various forms of social support over the past month. The internal consistency reliability has been consistently above .90 (Barrera, 1981; Barrera, Sandler, & Ramsay, 1981; Cohen & Hoberman, 1983). The test-retest reliability was .88 over a 2-day interval (Barrera et al., 1981).

Procedure

The study was completed online. As part of the sign-up process for the research participation website, participants were encouraged to complete a prescreening questionnaire. The LASSI was included in that questionnaire. The LASSI scores of the participants who signed up for the full study were connected to their scores from the main study.

In the main study, participants first answered questions reporting their gender identity (“Male,” “Female,” “Non-Binary,” “Agender,” and “I identify in a way not mentioned”), race/ethnicity (“White,” “Black/African American,” “Native American/Alaska Native,” “Asian,” “Native Hawaiian/Pacific Islander,” “Latino,” “Multiracial,” and “Other”), and age (from 18 to 30 increasing in increments of one year). Next, participants filled out the NfS Scale, the DASS-21, the IPIP-E scale, the BSI, and the ISSB. The items in the NfS scale were presented in a random order, while the other scales were given in their original order. After finishing the measures, all participants received a debriefing form explaining the purpose of the current study.

Results

Scale scores were created by adding up scores on each scale item, reversing items as appropriate. Alpha reliabilities are reported in Table 1. The reliabilities of all the scales were quite strong (≥ 0.84), except for Need for Support ($\alpha = 0.64$).

Correlations

Table 1 includes the intercorrelations of all the variables. All social support variables (Perceived Availability of Social Support, Enacted Support, Need for Support) were moderately correlated with each other (r 's = 0.43 to 0.55). As expected, Perceived Availability of Social Support negatively correlated with Depression, Anxiety, and Stress; but it was positively correlated with Extraversion ($r=0.38$). In other words, as participants reported higher perceived availability of social support, they reported lower rates of depression, stress, and anxiety. Furthermore, people with higher levels of extraversion reported higher perceived availability of social support and higher perceived enacted support. Need for Support was negatively correlated with all outcome variables (r 's = -.29 to -.41) as well as daily hassles ($r = -.23$). Additionally,

Table 1 Correlations and Reliabilities of All Variables

	Correlations										
	Theoretical Range	<i>M</i>	<i>SD</i>	LASSI	ISSB	NfS	IPIP-E	DASS-D	DASS-A	DASS-S	BSI
LASSI	36-180	139.57	27.16	.98							
ISSB	40-200	93.76	30.16	.44**	.96						
NfS	9-63	30.88	7.00	.55**	.43**	.64					
IPIP-E.	10-50	29.65	8.62	.38**	.34**	.41**	.89				
DASS-D	0-21	12.99	5.79	-.34**	-.03	-.41**	-.38*	.92			
DASS-A	0-21	13.34	4.88	-.29**	.01	-.30**	-.26**	.68**	.84		
DASS-S	0-21	15.20	5.49	-.29**	.10	-.29**	-.18*	.72**	.79**	.88	
BSI	25-225	114.80	43.12	-.22*	.04	-.23*	-.20*	.58**	.71**	.63**	.93

* $p < .05$ (one-tailed); ** $p < .01$ (one-tailed)

NOTE: Alpha reliabilities appear on the main diagonal; LASSI = Late Adolescent Social Support Inventory; ISSB = Inventory of Socially Supportive Behaviors; NfS = Need for Social Support; IPIP-E= International Personality Item Pool - Extraversion; DASS-D = Depression Anxiety Stress Scales – Depression; DASS-A = Depression Anxiety Stress Scales – Anxiety; DASS-S = Depression Anxiety Stress Scales – Stress; BSI = Background Stress Inventory

Enacted Support was found to be positively correlated with both Need for Support ($r = .43$) and Extraversion ($r = .34$).

Gender Comparisons

Differences between males and females were examined with t-tests. (There were too few participants who indicated a gender other than male or female to allow statistical comparisons.) Females had higher scores on all of the main variables of the study (see Table 2), but these effects were only significant for Daily Hassles scores. The difference was marginally significant ($p < .10$) for Anxiety and for Enacted Support.

PROCESS Analysis

The PROCESS procedure (Hayes, 2022) was used with SPSS to test the hypothesized causal models. Analyses examined both Need for Social Support and Extraversion due to low reliability of Need for Social Support as well as past research indicating how much extraversion affects other variables. Almost all of the overall models for both simple moderation and moderated moderation were significant ($p < .05$). The current study's focus was, however, on the specific interactions rather than the overall models. The simple moderation models (see Figure 1) tested whether Extraversion or Need for Support moderated the relationship between perceived availability of social support and the outcome variables (i.e., depression, anxiety, and stress). The moderation effect (i.e., Extraversion or Need for Support moderating the relationship between perceived availability of social support and the outcome variables) was not significant in any of the models (Table 3).

Table 2 T-tests Across Gender

	Males			Females			t	p	Effect Size
	Mean	95% CI of the Mean	SD	Mean	95% CI of the Mean	SD			
LASSI	134.30	120.26, 148.34	30.00	142.52	135.91, 149.14	26.28	-1.18	.12	-.30
NfS	29.3	25.69, 32.91	7.71	31.63	29.91, 33.36	6.86	-1.28	.10	-.33
ISSB	86.65	72.94, 100.36	29.30	97.92	90.43, 105.41	29.74	-1.48	.07	-.38
IPIP-E	30.13	26.81, 31.29	8.53	30.49	29.65, 31.21	8.78	-.41	.34	-.11
DASS-S	13.75	11.18, 16.32	5.48	15.47	14.10, 16.85	5.45	-1.23	.11	-.32
DASS-A	11.85	9.81, 13.89	4.36	13.58	12.36, 14.82	4.88	-1.42	.08	-.36
DASS-D	12.05	9.72, 14.39	4.98	12.95	11.46, 14.45	5.93	-0.62	.27	-.16
BSI	97.00	78.73, 115.27	39.03	119.36	108.60, 130.13	42.76	-2.07	.02	-.53

N=83

NOTE: p-values are one-tailed; Effect Size is Cohen's d. LASSI = Late Adolescent Social Support Inventory; ISSB = Inventory of Socially Supportive Behaviors; NfS = Need for Social Support; IPIP-E= International Personality Item Pool - Extraversion; DASS-D = Depression Anxiety Stress Scales – Depression; DASS-A = Depression Anxiety Stress Scales – Anxiety; DASS-S = Depression Anxiety Stress Scales – Stress; BSI = Background Stress Inventory.

Table 3 PROCESS (Simple Moderation)

(a) PROCESS Results for Need for Support and PASS

	Outcome Variable								
	Depression			Anxiety			Stress		
	B	t/F*	p	B	t/F*	p	B	t/F*	p
PASS	.07	.93	.36	.09	1.23	.22	.08	.97	.31
NfS	.09	.27	.79	.40	1.26	.21	.27	.79	.43
PASS X NfS	-.003	-1.15	.25	-.004	-1.76	.08	-.003	-1.31	.19
Model		6.41	.0005		4.63	.005		3.34	.02
	R ² = .16 (3, 100)			R ² = .12 (3, 104)			R ² = .09 (3, 105)		

(b) PROCESS Results for Need for Support and ISSB

	Outcome Variable								
	Depression			Anxiety			Stress		
	B	t/F*	p	B	t/F*	p	B	t/F*	p
ISSB	.09	.89	.38	.16	1.89	.06	.17	1.77	.08
NfS	-.26	-.94	.35	.17	.70	.49	.11	.40	.69
ISSB X NfS	-.002	-.54	.60	-.005	-1.68	.10	-.004	-1.42	.16
Model		7.06	.0003		3.64	.02		3.93	.01
	R ² = .19 (3, 93)			R ² = .10 (3, 97)			R ² = .11 (3, 97)		

TABLE 3 CONTINUES

TABLE 3 CONTINUED

(c) PROCESS Results for Extraversion and PASS

	Outcome Variable								
	Depression			Anxiety			Stress		
	B	t/F*	p	B	t/F*	p	B	t/F*	p
PASS	-.13	-1.74	.09	-.03	-.42	.68	-.05	-.70	.48
IPIP-E	-.63	-1.91	.06	-.01	-.04	.97	-.15	-.46	.65
PASS X IPIP-E	.003	1.36	.18	-.001	-.21	.84	.001	.24	.81
Model		5.63	.001		2.88	.04		1.98	.12
	R ² = .15 (3, 99)			R ² = .08 (3, 103)			R ² = .05 (3, 104)		

(d) PROCESS Results for Extraversion and ISSB

	Outcome Variable								
	Depression			Anxiety			Stress		
	B	t/F*	p	B	t/F*	p	B	t/F*	p
ISSB	-.07	-1.03	.30	-.09	-1.51	.13	-.04	-.57	.58
IPIP-E	-.53	-2.63	.01	-.45	-2.52	.01	-.30	-1.53	.13
ISSB X IPIP-E	.003	1.41	.16	.003	1.86	.07	.002	1.00	.32
Model		5.52	.002		2.91	.04		1.58	.20
	R ² = .15 (3, 92)			R ² = .08 (3, 96)			R ² = .05 (3, 96)		

NOTE: PASS = Perceived Availability of Social Support; NfS = Need for Support; ISSB = Inventory of Socially Supportive Behaviors; IPIP-E = International Personality Item Pool - Extraversion

*- Test statistics for the individual coefficients are t's. Test statistics for the overall models are F's.

Table 4 PROCESS (Moderated Moderation)

(a) PROCESS Results for NFS, PASS, and BSI

	Outcome Variables								
	Depression			Anxiety			Stress		
	B	t/F*	p	B	t/F*	p	B	t/F*	p
BSI	.08	5.70	<.01	.08	7.39	<.01	.08	6.63	<.01
PASS	-.01	-.32	.75	-.01	-.74	.46	-.01	-.54	.59
NFS	-.31	-3.74	<.001	-.13	-1.88	.06	-.13	-1.68	.10
BSI X PASS	-.0004	-.87	.39	-.0004	-.91	.36	-.0003	-.67	.50
BSI X NFS	-.002	-.91	.37	-.001	-.55	.59	-.001	-.36	.72
PASS X NFS	-.003	-1.28	.20	-.003	-1.56	.12	-.002	-.81	.41
BSI X PASS X NFS	-.0001	-1.55	.13	.00	-.56	.57	.00	-.48	.63
Model		10.13	<.001		13.95	<.001		10.89	<.001
	$R^2 = .44$	(7, 92)		$R^2 = .50$	(7, 96)		$R^2 = .44$	(7, 97)	

(b) PROCESS Results for Extraversion, PASS, and BSI

	Outcome Variables								
	Depression			Anxiety			Stress		
	B	t/F*	p	B	t/F*	p	B	t/F*	p
BSI	.07	5.59	<.01	.08	7.51	<.01	.08	6.98	<.01
PASS	-.02	-1.01	.31	-.02	-1.28	.20	-.02	-1.21	.23
IPIP-E	-.12	-1.93	.06	.003	.06	.95	.01	.09	.93
BSI X PASS	-.0001	-.33	.74	-.001	-1.30	.20	-.0004	-1.03	.30
BSI X IPIP-E	-.001	-.47	.64	.001	.54	.59	.001	.66	.51
PASS X NFS	.003	1.16	.25	-.001	-.51	.61	-.0003	-.18	.86
BSI X PASS X NFS	.00	.50	.62	.0001	1.41	.16	.00	.74	.46
Model		8.47	<.001		13.17	<.001		10.31	<.001
	$R^2 = .39$	(7, 92)		$R^2 = .49$	(7, 96)		$R^2 = .43$	(7, 97)	

TABLE CONTINUES

TABLE 4 CONTINUED

(c) PROCESS Results for NfS, ISSB, and BSI

	Outcome Variables								
	Depression			Anxiety			Stress		
	B	t/F*	p	B	t/F*	p	B	t/F*	p
BSI	.18	1.15	.25	.22	1.84	.07	.12	.81	.42
ISSB	.03	.14	.89	.15	.93	.36	-.01	-.03	.98
NfS	-.02	-.03	.97	.45	1.01	.31	.12	.24	.81
BSI X ISSB	-.001	-.44	.66	-.001	-1.01	.32	< .00	-.01	.99
BSI X NfS	-.004	-.81	.42	-.01	-1.28	.20	-.003	-.55	.58
ISSB X NfS	-.001	-.13	.90	-.01	-1.04	.30	-.001	-.15	.88
BSI X ISSB X NfS	< .00	.52	.60	< .00	1.11	.27	< .00	.27	.78
Model		7.64	< .00		12.21	< .00		8.98	< .00
	$R^2 = .38$ (7, 87)			$R^2 = .48$ (7, 91)			$R^2 = .41$ (7, 91)		

(d) PROCESS Results for Extraversion, ISSB, and BSI

	Outcome Variables								
	Depression			Anxiety			Stress		
	B	t/F*	p	B	t/F*	p	B	t/F*	p
BSI	.12	.94	.35	.19	2.01	.05	.10	.90	.37
ISSB	-.11	-.54	.59	.10	.66	.51	.02	.11	.92
IPIP-E	-.15	-.28	.78	.25	.60	.55	.09	.19	.85
BSI X ISSB	.0002	.11	.91	-.001	-1.24	.22	-.0003	-.27	.79
BSI X IPIP-E	-.003	-.63	.53	-.004	-1.32	.19	-.002	-.50	.62
ISSB X IPIP-E	.003	.42	.67	-.004	-.77	.44	-.002	-.27	.78
BSI X ISSB X IPIP-E	< .00	.10	.92	< .00	1.40	.17	< .00	.55	.59
Model		7.23	< .00		12.73	< .00		8.38	< .00
	$R^2 = .37$ (7, 86)			$R^2 = .50$ (7, 90)			$R^2 = .39$ (7, 90)		

NOTE: BSI = Background Stress Inventory; PASS = Perceived Availability of Social Support; NfS = Need for Support; IPIP-E = International Personality Item Pool – Extraversion

*- Test statistics for the individual coefficients are t's. Test statistics for the overall models are F's.

Additionally, the moderated moderation effects were examined (see Figure 2). The model examined whether perceived availability of social support moderated the relationship between life hassles and the outcome variables and whether this moderated relationship itself was moderated by either Extraversion or Need for Support. The specific three-way interactions (i.e., Extraversion/Need for Support x perceived availability of social support/enacted support x daily hassles) were not significant ($p = .13$ to $.63$). Further details of these results appear in Table 4.

Discussion

The purpose of this study was to explore whether need for social support moderated the relationship between social support and depression, anxiety, and stress. This hypothesis was not supported. Specifically, none of the interactions within the causal models were found to be statistically significant.

This lack of support for the hypotheses could be due to a couple of factors. First, the results could be due to not having enough participants to provide sufficient statistical power to identify the interactions we were looking for. Having a small sample size becomes a problem because effect sizes of interactions tend to be smaller than effect sizes for main effects (Agunis et al., 2005; Baranger et al., 2023). Thus, having a small sample size would make it even more difficult to achieve a significant effect size for interactions.

Another possibility is that the moderating variable, Need for Support, was not reliably measured. The Need for Support Scale was created for this study to assess people's trait-level beliefs about their need or preference for social support. The reliability of the scale was relatively low ($\alpha = 0.64$). Low reliability typically limits the size of the correlation of a score with other variables (see, e.g., Henson, 2001; although not universally, cf., Nimon et al., 2012). Perhaps more items should have been added to the scale (there were only 9 items in the current study) to

help increase reliability. Having more items might have helped increase the reliability of the measure.

As predicted, Need for Support was positively correlated with Extraversion, providing at least some evidence for the validity of our measurement of this construct. This correlation makes sense. As mentioned previously, research shows that people who score high in extraversion are more likely to seek out social support (Cukrowicz et al., 200; Ekşi, 2010; Tkach & Lyubomirsky, 2006). The higher the need for social support, the greater the likelihood people would seek out social support than if there was a low need for social support.

On the other hand, the results did not support the hypothesis that women have higher levels of need for support than men, which thus argues against the validity of the measurement. Another possibility (rather than a lack of validity of the scale) is that women and men – at least the women and men in the stage of life of the population I studied - are more similar in their needs for social support than I expected. The results could be due to the fact data were collected from undergraduate students who are relatively new to living on their own. In other words, perhaps all undergraduate students (regardless of gender) have similar levels of need for social support because they are entering a new transitional period in their lives. Additionally, women and men in my sample scored nearly the same on Extraversion. Having similar levels of extraversion may mean that both women and men are similar in their needs for social support. Maybe there would be a starker contrast in levels of need for social support if data was collected from men and women who were out of college and more established in living on their own. On the other hand, perhaps the current results are due to the fact Need for Support had low reliability. Thus, any potential gender difference was not able to be determined due to using a low reliable measurement.

On a different note, enacted support was found to be positively correlated with extraversion. It would seem understandable that people high in extraversion would receive more social support than people low in extraversion due to actively seeking out social support as well as most likely having more social support to use.

Need for Support was also positively correlated with scores on the LASSI and the ISSB. As people reported a higher need for social support, they also reported higher levels of perceived availability of social support and received social support. These correlations could mean that the Need for Support measure overlaps greatly with other social support measures (e.g., LASSI and ISSB). These correlations also make sense. For example, people with a higher need for support, ideally, would be more likely to have more received support and perceived availability of social support than people with a lower need for support.

The current study also confirmed that perceived availability of social support, as measured by the LASSI, had a negative correlation with depression, stress, and anxiety, and a positive correlation with extraversion, replicating previous research (e.g., Cukrowicz et al., 2008; Demakis and McAdams, 1994; Hill et al., 2018; Rankin et al., 2018; Scher et al., 2023; Wiesmarerova et al. 2019). These findings not only increase confidence in the importance of social support, but they also further support the validity of the LASSI for measuring perceived availability of social support.

Another finding was the fact that the outcome variables (i.e., depression, stress, and anxiety) were correlated with PASS but not with enacted support. This finding is found in previous literature such as Haber et al. (2007). They reviewed 23 studies that used ISSB and any measure of perceived social support and found that perceived social support was correlated with health outcomes but not received support. Barrera et al. (1986) found that perceived social

support had the greatest amount of evidence for social support being negatively correlated with distress. This finding may suggest that simply perceiving availability of social support is enough to affect people's levels of depression, stress, and anxiety. Perhaps knowing that people have social support in their lives is enough to help them deal with feelings of depression, anxiety, and stress; and, thus, they can deal with these feelings without reaching out to social support. On the other hand, the social support people receive is not good enough to affect variables like depression, anxiety, and stress. The ISSB only measures the amount of social support received, not whether that amount of social support received had positive or negative effects. Taylor (2011) claimed social support can be beneficial if the following occur: people have large or dense social support networks, the support provided is appropriate for addressing the stressor in question, and whether the right kind of support comes from the right person.

More work needs to be done to develop a more reliable instrument to measure the Need for Social Support. The fact that overall models were found to be significant in this study, while interactions were not found to be significant, means that need for social support could still play a role in people's perceived availability of social support and the effect it has on variables like depression, anxiety, and stress. If Need for Social Support was reliably measured, then there is a chance the results would have supported this study's hypotheses. There would not have been a difference in levels of depression, anxiety, and stress between people who perceived having high levels of social support and people who perceived having low levels of social support.

Future research can also examine need for social support's effect on variables like depression, anxiety, and stress in different situations (e.g., moving to college, receiving a health diagnosis, death of a close loved one, etc.) and examining different age groups. People's levels

of need for social support also likely fluctuate over the years, so it would be beneficial to examine the role need for social support developmentally.

The impact gender plays should also continue to be examined as well as extraversion's role in need for social support. Although the current study's findings do not support the proposed hypotheses, the findings do not eliminate the possibility that there are individual differences in need for social support, and that these individual differences affect people's lives. More research needs to be done using a more reliable measure for Need for Social Support and a much larger sample size.

Overall, what the current study did find was that Need for Social Support was positively correlated with extraversion, PASS, and enacted support. In other words, people who reported higher needs of social support also reported higher levels of extraversion as well as having higher levels of both perceived availability of social support and higher levels of received social support. Additionally, the outcome variables (i.e., depression, stress, and anxiety) were negatively correlated with PASS, but they were not negatively correlated with enacted support. Thus, people who reported higher levels of perceived availability of social support would also report lower levels of depression, anxiety, and stress than people who reported lower levels of perceived social support. Although enacted support did not show any correlation with the outcome variables, it was found to be positively correlated with extraversion. Even though Need for Social Support was not found to be significant in predicting perceived availability's effect on depression, anxiety, and stress, future research should continue to examine individual differences in need for social support. Future research should also use a more reliable measure of Need for Social Support as well as a larger sample size than what was used in the current study.

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Appendix

Instruments Used in This Study

Scales

Late Adolescent Social Support Inventory

The following questions ask about who you have in your life to help you with various things. Please tell us how often you feel there are people who are available to do these things for you.

Although some questions may sound similar, please answer all the questions.

Do people listen to you when you discuss problems you're having at home or school?

Never Rarely Sometimes Often Very Often

Are there people who are attentive to your needs?

Never Rarely Sometimes Often Very Often

Do people close to you help you work out an issue you've had at school or at home?

Never Rarely Sometimes Often Very Often

Are there people who will listen to your innermost feelings without criticizing them?

Never Rarely Sometimes Often Very Often

Can you count on people close to you to give you good advice?

NEED FOR SOCIAL SUPPORT

Never Rarely Sometimes Often Very Often

Are there people you can count on to be there for you when you need them?

Never Rarely Sometimes Often Very Often

Are you normally offered support by people close to you during a difficult time?

Never Rarely Sometimes Often Very Often

Are there people who check in with you to see how you are doing?

Never Rarely Sometimes Often Very Often

Are there people who will comfort you?

Never Rarely Sometimes Often Very Often

Do you feel there are people close to you who support your interests?

Never Rarely Sometimes Often Very Often

Do you feel there are people who care about you?

Never Rarely Sometimes Often Very Often

Are there people who are genuinely interested in how your day was?

NEED FOR SOCIAL SUPPORT

Never Rarely Sometimes Often Very Often

Do people spend time with you when you need help?

Never Rarely Sometimes Often Very Often

Do you have people who will reassure you after you've had a bad day?

Never Rarely Sometimes Often Very Often

Do people close to you make you feel welcome and good about yourself?

Never Rarely Sometimes Often Very Often

Do you feel that you have guidance when you're struggling with personal problems?

Never Rarely Sometimes Often Very Often

Do you feel that you have guidance when you're struggling with personal problems?

Never Rarely Sometimes Often Very Often

Do people show you they are proud of you?

Never Rarely Sometimes Often Very Often

Do you feel valued by people close to you?

Never rarely sometimes often /ery Often

Do people close to you push you to do your best?

Never rarely sometimes often /ery Often

Are there people who enjoy hearing about what you think?

Never rarely sometimes often /ery Often

Are there people who help point you in the right direction when you're unsure of what to do?

Never rarely sometimes often /ery Often

Do people show you support when you've gone through a difficult time in your life?

Never rarely sometimes often /ery Often

Do you feel there are people who will listen to you when you need to talk?

Never rarely sometimes often /ery Often

When you feel tense or under pressure, are there people who help you feel more relaxed?

Never rarely sometimes often /ery Often

Are there people who have helped you to think of ways to de-stress when you're overwhelmed?

Never Rarely Sometimes Often Very Often

Are there people you turn to for advice with your personal problems?

Never Rarely Sometimes Often Very Often

Are there people who help guide you in thinking about your future?

Never Rarely Sometimes Often Very Often

Are there people you can count on for help over an extended period of time?

Never Rarely Sometimes Often Very Often

Do people offer you advice to help you avoid making mistakes?

Never Rarely Sometimes Often Very Often

Are there people in your life who you can trust to tell you when there is something you can improve on?

Never Rarely Sometimes Often Very Often

Are there people who help you develop your academic and/or career goals?

Never rarely sometimes often /ery Often

Do people help you if you're struggling with a concept in class, or a technique for sports/band/other activities?

Never rarely sometimes often /ery Often

Do people spend extra time with you to help you work out a problem?

Never rarely sometimes often /ery Often

Are there people who help you practice, rehearse, or do school work?

Never rarely sometimes often /ery Often

Are there people you can count on in an emergency?

Never rarely sometimes often /ery Often

Need for Support

1. When I have had a hard day, it helps me to talk it over with a friend or family member.
2. Support from my friends and/or family members is an important part of how I deal with stress.
3. When I am depressed or anxious, it is best for me is to handle it myself rather than talk to my friends or family members. (R)
4. I like to figure out my problems on my own, rather than rely on friends and/or family members to give me advice. (R)
5. I am happy to depend on friends or family members for information I need.
6. It is good to get feedback from others because sometimes you are not able to evaluate things all by yourself.

7. I would rather not ask people to help me do things, even if it means I don't accomplish everything I want to. (R)
8. If I have an important financial need, I don't mind borrowing money from a friend or family member.
9. When I need to do something that is a lot of work, I feel it is better to do it myself rather than ask others for assistance. (R)

Depression, Anxiety, and Stress-21

Please read each statement and circle a number 0, 1, 2 or 3 which indicates how much the statement applied to you over the past week. There are no right or wrong answers. Do not spend too much time on any statement.

The rating scale is as follows:

- 0 Did not apply to me at all
 - 1 Applied to me to some degree, or some of the time
 - 2 Applied to me to a considerable degree or a good part of time
 - 3 Applied to me very much or most of the time
- 1 (s) I found it hard to wind down
 - 2 (a) I was aware of dryness of my mouth
 - 3 (d) I couldn't seem to experience any positive feeling at all
 - 4 (a) I experienced breathing difficulty (e.g. excessively rapid breathing, breathlessness in the absence of physical exertion)
 - 5 (d) I found it difficult to work up the initiative to do things
 - 6 (s) I tended to over-react to situations
 - 7 (a) I experienced trembling (e.g. in the hands)
 - 8 (s) I felt that I was using a lot of nervous energy
 - 9 (a) I was worried about situations in which I might panic and make a fool of myself
 - 10 (d) I felt that I had nothing to look forward to
 - 11 (s) I found myself getting agitated
 - 12 (s) I found it difficult to relax
 - 13 (d) I felt down-hearted and blue
 - 14 (s) I was intolerant of anything that kept me from getting on with what I was doing
 - 15 (a) I felt I was close to panic
 - 16 (d) I was unable to become enthusiastic about anything
 - 17 (d) I felt I wasn't worth much as a person
 - 18 (s) I felt that I was rather touchy
 - 19 (a) I was aware of the action of my heart in the absence of physical exertion (e.g. sense of heart rate increase, heart missing a beat)
 - 20 (a) I felt scared without any good reason
 - 21 (d) I felt that life was meaningless

IPIP-Extraversion

- + keyed Feel comfortable around people.
Make friends easily.
Am skilled in handling social situations.
Am the life of the party.
Know how to captivate people.
- keyed Have little to say.
Keep in the background.
Would describe my experiences as somewhat dull.
Don't like to draw attention to myself.

Don't talk a lot.

Background Stress Inventory

Financial

Finding the time to pay your bills by the due date

Not being able to pay your bills

Unexpected events requiring additional spending that exceed your budget (e.g., vehicle repair and urgent medical attention)

Existing and/or growing debt

Consequences of late payments (e.g., having utilities shut off)

Occupational

Commuting to work and/or carpooling (e.g., length of time)

Work and/or school deadlines, arriving to work and/or school on time, appointments (e.g., scheduling them and keeping them)

Advancing in your career and/or education

Fulfilling the duties of your job

Feeling underappreciated at work

Environment

Hazardous road conditions (e.g., excessive traffic)

Pollution (e.g., smog and smells)

Living in a highly populated or congested area

Noises in the environment (e.g., air traffic and trains)

Terrorism

Health

Body image and living up to society's expectations of body size

Having a chronic illness or health problem

Increasing health behaviors (e.g., getting sufficient exercise)

Eating/maintaining a healthy, balanced diet

Reducing or eliminating health-impairing behaviours (e.g., smoking, alcohol and sun tanning)

Social

Long-lasting relationship issues with your significant other or people with whom you like

Being able to maintain existing friendships

Finding a suitable intimate partner

Adapting to a change in life circumstances (e.g., moving)

Relationships that have ended

Inventory of Socially Supportive Behaviors (ISSB)

During the past four weeks, how often did other people do these activities for you, to you, or with you:

1. Looked after a family member when you were away.
2. Was right there with you (physically) in a stressful situation.
3. Provided you with a place where you could get away for awhile.
4. Watched after your possessions when you were away (pets, plants, home, apartment, etc.).
5. Told you what she/he did in a situation that was similar to yours.
6. Did some activity with you to help you get your mind off of things.
7. Talked with you about some interests of yours.
8. Let you know that you did something well.
9. Went with you to someone who could take action.
10. Told you that you are OK just the way you are.
11. Told you that she/he would keep the things that you talk about private - just between the two of you.
12. Assisted you in setting a goal for yourself.
13. Made it clear what was expected of you.
14. Expressed esteem or respect for a competency or personal quality of yours.
15. Gave you some information on how to do something
16. Suggested some action that you should take.
17. Gave you over \$25.
18. Comforted you by showing you some physical affection.
19. Gave you some information to help you understand a situation you were in.
20. Provided you with some transportation.
21. Checked back with you to see if you followed the advice you were given.
22. Gave you under \$25.
23. Helped you understand why you didn't do something well.
24. Listened to you talk about your private feelings.
25. Loaned or gave you something (a physical object other than money) that you needed.
26. Agreed that what you wanted to do was right.
27. Said things that made your situation clearer and easier to understand.
28. Told you how he/she felt in a situation that was similar to yours.
29. Let you know that he/she will always be around if you need assistance.
30. Expressed interest and concern in your well-being.
31. Told you that she/he feels very close to you.
32. Told you who you should see for assistance.
33. Told you what to expect in a situation that was about to happen.
34. Loaned you over \$25.
35. Taught you how to do something.
36. Gave you feedback on how you were doing without saying it was good or bad.
37. Joked and kidded to try to cheer you up.
38. Provided you with a place to stay.

39. Pitched in to help you do something that needed to get done.
40. Loaned you under \$25.