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Investigation of Social Connectedness in a College Population and its Relationship to Perceived Stress and Health Symptoms

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INVESTIGATION OF SOCIAL CONNECTEDNESS IN A COLLEGE POPULATION AND ITS RELATIONSHIP TO PERCEIVED STRESS AND HEALTH SYMPTOMS

by

Sanya Sholetta Whittaker

A thesis to the Department of Psychology in partial fulfillment of the requirements for the degree of

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UNIVERSITY OF NORTH FLORIDA

COLLEGE OF ARTS AND SCIENCES

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The thesis of Sanya Sholetta Whittaker is approved: (Date)

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Chairperson

5/1/08

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Dean of Graduate Studies

6/1/08
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Abstract

The present study investigated factors related to social connectedness and social support in a college population. Participants in the study were 486 volunteer students at the University of North Florida. All data were collected through a world wide web surveying program that allowed each participant to complete surveys on computers from any location. The surveys administered were the Social Connectedness Scale, the Multidimensional Scale of Perceived Social Support (MSPSS), the Perceived Stress Scale 10, the Patient Health Questionnaire 15 (PHQ15), and the Center for Epidemiological Studies Depression Scale-Revised (CESD-R) along with a demographics questionnaire. Results show that participants in the ethnic majority group report greater social connectedness and social support than minority participants. Social connectedness is associated with perceived stress and health symptoms, even when controlling for other related factors. The impact of social connectedness on perceived stress explains the health effects of social connectedness, as perceived stress mediates the relationship between social connectedness and stress.
Investigation of Social Connectedness in a College Population and its Relationship to Perceived Stress and Health Symptoms

An abundance of literature has been published discussing the relation of many factors to an individual's perceived stress. These factors include demographic variables, social connectedness, self-esteem, depression, health, and social support. However, little attention has been given to cultural differences in social variables, perceived stress, or health symptoms. Most of the cross-cultural studies have examined acculturative stress in relation to other variables. In the past, much of the research on social connectedness has focused on other social factors and outcomes, but little has focused on the relationship between connectedness and health, especially as mediated by perceived stress. While many relationships have been established, more connections may exist between these and other variables.

Social Connectedness

Various definitions, both conceptual and operational, of social connectedness and social support have been used in the past. Therefore, it is important to provide a clear understanding of these constructs as they relate to the current investigation. Social connectedness can be defined as how one views oneself in relation to the external world (Lee & Robbins, 2000, as stated in Williams & Galliher, 2006). It considers all aspects of social interaction including family, friends, and the community; and refers to one's relationship with "others" in general. Everyday, positive interactions are also part of what makes up one's sense of social connectedness (Townsend & McWhirter, 2005). It is said to be relatively stable and shaped through experiences early in one's life (Williams & Galliher, 2006). The lack of connectedness may have a negative impact on health,
adjustment, general well-being, and psychological functioning. Low connected individuals may report a lack of meaningful, supportive relationships. These individuals may also experience psychological distress as a result of lack of meaningful connections with others (Townsend & McWhirter, 2005; Williams & Galliher, 2006).

In terms of one's social environment, low social connectedness may be a social stigma making these individuals perceived as being lonely. Connectedness may also be related to the way one views his or her social situation including friends, roommates, and people in general. Low connected individuals may perceive their environment as negative and cold, while people high in connectedness might see it as welcoming and positive (Lee, et al., 2002). Overall, problems with social connectedness indicate a more persistent, global inability to connect with the social world (Williams & Galliher, 2006). An individual's level of social connectedness directs how he or she feels, thinks, and behaves in different social situations (Yeh & Inose, 2003). It is important to study social connectedness among college students because this is an important adjustment period and some may have issues with their new social environment, norms, and relationships upon entering. Social connectedness is also related to belongingness and is said to shape adjustment throughout one's life. Compared to social support, social connectedness is a more global construct that encompasses much more than interpersonal relations (Williams & Galliher, 2006).

Social connectedness has been found to be negatively associated with stress and other variables and may be a protective factor against the effects of stress. Females have been found to report higher levels of social connectedness than men, and the relationship between social connectedness and perceived stress has been found to be more
pronounced in men (Moller, Fouladi, McCarthy, & Hatch, 2003; Lee, et al., 2002). Social connectedness has been found to be associated with health and is also a protective factor against distress and its outcomes (Donald, Dower, Correa-Velez, & Jones, 2006). Social connectedness at a young age (early adolescence) has been found to be predictive of health and health risk behaviors later in life (Bond, et al., 2007). The research addressing social connectedness as it relates to perceived stress and health symptoms is limited and should be examined more thoroughly.

**Social Support**

Social support has received a lot of attention as a moderator of perceived stress. Compared to social connectedness, social support is more relationship and interaction-specific. It relates to interactions between individuals and their environments, and refers to functions performed for the individual by others. Social support can be defined as an individual's perception of how much he or she relies on others for emotional support, as well as other forms of valuable interpersonal resources (Williams & Galliher, 2006).

Perceived social support refers to one's personal appraisal of his or her available support. Day and Livingstone (2003) define it as one's perception of available support and one's perception of from whom he or she could seek support. These researchers point out that one's perception of his or her social support network is actually more important than whether or not they receive support or those sources follow through. Also, one's perception of social support may depend on individual differences. Support is a predictor of general well-being and a buffer (or a protective factor) against the effects of stress. Seeking social support is classified as a coping strategy for individuals undergoing stress (Day & Livingstone, 2003). Individuals high in social support may be more optimistic.
and cope better in stressful situations.

Mak and Chen (2006) found social support to be a significant predictor of stress, with emotional and instrumental support negatively correlated with distress. Heiman (2004) found that age, work status, and gender produced differences in social support, perceived stress, and academic stress, respectively. Females also score significantly higher in social support from family than men (Moller, et al., 2003). Day and Livingstone (2003) found that women perceived having higher levels of stress and social support from their significant others and friends than men. Compared to men, women tend to seek more emotional support from their sources. Bisconti and Bergeman (1999) found that social support was negatively correlated with depression and perceived health in adults, suggesting that individuals high in support were less likely to experience symptoms and felt healthier. Because of the consistency of past research findings, it is suggested that social support, coping, and stress are inseparable variables and should be considered together in the future (Heiman, 2004).

Perceived Stress and Health

It is suggested that the impact of stressful events may be influenced by one’s perception of his or her stress levels to some extent (Cohen, Karmack, & Mermelstein, 1983). As an outcome variable, perceived stress measures the level of stress experienced on an individual basis. The construct is general and subjective in nature, tapping into one’s ideas of how stressful he or she feels as opposed to specific stress-provoking events. Lazarus (1966, 1977) postulated that after a stressful event, one’s cognitive actions and reactions influence one’s emotional responses to that event (Cohen, et al., 1983). This suggests that it is not the event itself that provokes some emotional
responses, but one’s thought processes and perceptions in reaction to the stressor.

Past research has consistently found that perceived stress is one of the psychological variables contributing to physical health, specifically neck and back pain (Bongers, Ijmker, van den Heuvel, & Blatter, 2006). Environmental stress is a predictor of such physiological outcomes as fatigue, headache, and cortisol variability in children (Walinder, Gunnarsson, Runeson, & Smedje, 2007). Stress has been linked to physiological reactivity in other studies as well. Clements and Turpin (1999) found that different levels of life event stress result in differences in symptom levels, electrodermal activity, and heart rates in students. Along with perceived stress being an outcome of social and other variables, one’s stressful experiences yield many health outcomes.

Ethnicity, Social Factors, and Perceived Stress

Many past studies have found racial and cultural differences when measuring stress in participants. Rhee, Chang, and Rhee (2003) showed significant differences in acculturative behaviors, network of friends, and family contexts between the different ethnicities. Caucasians reported having more friends, a more ethnically diverse group of friends, dating more frequently, and being more open to interracial relationships. Asians reported having more problems with parent communication, but these differences were only significant for fathers. Asians were also less open to communicate with their parents, alluding that this social support source is less available in their culture.

According to Yeh and Inose (2003), cross-cultural encounters may lead to physical, social, and psychological problems for individuals involved. Differences between cultures exist in social interaction, and may prevent people from forming close relationships. Past research suggests that social support serves as a buffer for
international students specifically when they experience acculturative stress. Acculturative stress refers to one’s experience of stress as a direct result of cross-cultural encounters that can lead to physical, psychological, and social problems (Yeh & Inose, 2003). In their study, cultural differences emerged with Europeans less likely to experience acculturative stress than non-Europeans. The researchers suggest that Europeans experiencing less stress may be attributable to cultural values in America being based on White, European norms. Racism and discrimination may be possible reasons as well. In this case, international students are the minority and experience more stress. Closeness to one’s friends, family, and significant other may be viewed differently by different cultures and hold different weight.

Lee, et al. (2002) considered racial background as a potential confound, suggesting it may have an effect on differences in perceived stress. These researchers found that minority or majority racial status was significantly correlated with stress, but only for men. Minority men reported experiencing more stress than white men. However, race was not correlated with connectedness. Mak and Chen (2006) highlight the importance of considering different race and ethnic groups when studying stress. They found that social support was negatively correlated to stress for Chinese Americans. However, the researchers indicated that caution should be taken when generalizing these results to other ethnic groups because of their differing sociocultural backgrounds. This caution highlights the importance of looking at stress in different ethnic groups individually. These results show that culture influences many aspects of communication and social interaction, and is an important variable to consider.
Current Investigation

The present investigation examines differences between ethnic groups in social support, social connectedness, perceived stress, and health symptoms in a college population. The study also investigates whether connectedness, support, and ethnicity have an effect on stress and/or health symptoms. These factors were examined to see if differences existed between majority and minority ethnic groups, and whether ethnicity, other demographics, and social variables combined contribute to perceived stress and health symptoms. The sample was comprised of college students because of the importance of social interaction on college campuses and the implications findings may have for this population. Heiman (2004) suggests researchers should focus on students’ interaction with their environment, underlining the need for studies on social support (and connectedness) among college students. These variables, along with perceived stress and health symptoms, are important at this stage in one’s life because of the adjustment and transition periods one must go through. Some students may have issues with their new social environment, norms, and relationships upon entering college. The sample selected is representative of this college population in terms of racial diversity.

Based on past research as outlined earlier, it is hypothesized that majority and minority groups will score differently on social connectedness, perceived social support, perceived stress, and health symptoms measures. The minority group was expected to report experiencing more stress and health symptoms, but less support and connectedness.

The second hypothesis is that social support and connectedness will be negatively related to stress, even when controlling for other influencing variables such as depression.
Depression has been found to be related to mental and physical health and is often used as a covariate in health research (Bisconti & Bergeman, 1999). Also, the investigators explore which social variable is more strongly related to perceived stress.

Lastly, an explanatory analysis will investigate whether the relationship between social factors and health is mediated by perceived stress. Given the abundance of literature on perceived stress and health, it is expected that the stress of lack of connectedness explains health effects.

This investigation hopes that through testing social connectedness, perceived social support, perceived stress, and health symptoms considering different ethnic groups, future research can build on the idea of examining individual groups. Also, emphasis here is placed on the differentiation between the social perceptions: social connectedness and social support.

Method

Participants

Participants for this study were 486 undergraduate students at the University of North Florida predominantly from the psychology department. Participants were members of ExperimenTrak—a system used to enable students to get extra credit for their involvement in research, and provide easy access of participants to student researchers. Any other students were obtained by individual professors offering credit to those who sign up or individual recruitment. Participants were treated in accordance with the Ethical Principles outlined by the American Psychological Association (American Psychological Association, 2003).
Materials

The surveys administered were the Social Connectedness Scale, the Multidimensional Scale of Perceived Social Support (MSPSS), and the Perceived Stress Scale 10. All of these scales are self-report, Likert-type scales. Participants were also given the Patient Health Questionnaire 15 (PHQ15), a scale comprised of a list of somatic symptoms. All of the scales used for this study are presented in Appendix B.

Social Connectedness Scale (Lee & Robbins, 1995). This is an 8-item scale measuring how connected/disconnected individuals feel from the world and people that surround them. It seeks to measure the level of interpersonal closeness one is experiencing. Such statements as, "I feel disconnected from the world around me" and "I don't feel related to anyone" are included in this scale. All statements are worded negatively, and individuals chose from responses 1 (strongly agree) to 6 (strongly disagree), with higher scores indicating more connectedness. The reported reliability from the scale (computed in precious research) is $r = 0.91$ for internal item consistency and $r = 0.96$ for test-retest over a two-week period (Lee & Robbins, 1995; Lee, et al., 2002; Yeh & Inose, 2003). This scale was chosen to assess social connectedness because of its direct alignment with the conceptual definition for the current investigation.

Multidimensional Scale of Perceived Social Support (MSPSS) (Zimet, Dahlem, Zimet, & Farley, 1988). The MSPSS is comprised of 12 items assessing one's perceived level of social support from three sources: family, friends, and a significant other. Examples of questions include, "My family really tries to help me" for the family subscale, "I can count on my friends when things go wrong" for the friends subscale, and "There is a special person who is around when I am in need" for the significant other
The response set is 7-point and Likert-type ranging from 1 (very strongly disagree; not suitable) to 7 (very strongly agree; very suitable). Scores on each subscale range from 1-28 with higher scores expressing higher social support. Reported reliabilities for each subscale is $r = 0.91$ for family, $r = 0.89$ for friends, and $r = 0.90$ for significant other, with the overall reliability at $r = 0.92$ as found in the past (Heiman, 2004). Scores were calculated for total social support, and social support from one's significant other, family, and friends based on MSPSS subscales.

Perceived Stress Scale 10 (Cohen, Karmarek, & Mermelstein, 1983; Cohen & Williamson, 1988). This 10-item version of the scale is designed to measure how stressful one rates the events and situations in his or her life. Items include such items as "In the past month, how often have you felt that you were unable to control the important things in your life?" Responses are in the form of a 5-point scale ranging from 0 (never) to 4 (very often). Higher scores indicate a higher level of stress perceived by each individual. Past research reliabilities for different samples range from $r = 0.84$ to 0.86, with a test-retest over two days of $r = 0.85$ (Moller, et al., 2003). This scale was chosen because it seeks to measure recent, general stress as opposed to long-term, life stresses. These recent stressors would most likely be attributable to one's college enrollment and life.

The Patient Health Questionnaire somatic symptom scale (PHQ-15) (Kroenke, Spitzer, & Williams, 2002). This 15 item questionnaire, a subscale of a larger health inventory, is comprised of a list of somatic symptoms. Participants are asked to indicate the extent to which they have been bothered by each symptom over the past month on a 3-point scale from 0 (not bothered at all) to 2 (bothered a lot). Examples of symptoms
included are “stomach pain,” “headaches,” and “palpitations.” This scale assesses somatization by tapping into frequently reported stress-induced symptoms specifically. Scores are totaled, with higher scores indicating higher symptom severity. The scale’s internal reliability is reported as $r = 0.80$ according to past research (Kroenke, Spitzer, & Williams, 2002).

*Center for Epidemiological Studies Depression Scale- Revised (CESD-R)* (Eaton, Muntaner, Smith, Tien, & Ybarra, 2004). This 20-item scale assesses depressive symptomatology with a list of symptoms of which participants indicate the frequency of occurrence on a 5-point scale. Responses range from 0 (*not at all or less than one day*) to 4 (*nearly every day for two weeks*). Symptom description examples include, “my sleep was restless” and “I did not like myself.” Higher scores on the CESD-R indicate more depressive symptoms in participants (Eaton, Muntaner, Smith, Tien, & Ybarra, 2004). For the present investigation, this scale was used in order to control for depression in analyses.

*Demographics and Health Questionnaire.* Demographic questions were asked of participants to gain information about their background and other factors in their lives. Such questions as, "What is your ethnicity?" and "What is your gender?" were included in this questionnaire. Also, some health questions such as, "Have you been diagnosed with any of the following?" prompting participants to select choices that would describe health issues. Such demographic variables as gender, age, year in school, and relationship status have been shown to affect the outcome variables in different ways in the past (e.g. Heiman, 2004). Therefore, the present investigation tested these variables and others (discussed later) for relationships with each of the outcomes. However, demographics
were only considered in subsequent analyses if had a significant correlation with the outcomes.

Demographic variables: ethnicity, relationship status, Grade Point Average (GPA), classification, and traditional or non-traditional status were dichotomized for analysis purposes. Ethnicity was categorized as either majority (White) or minority (all other races). Relationship status was defined as single (never married, widowed, or divorced) or in a relationship (cohabitating, in a relationship, or married). GPA was split into below 2.5 or 2.5 and above. Student classification was sectioned into freshmen and all other classes. Finally, traditional or non-traditional student status was defined as traditional student (one who entered college directly following high school and did not take a break at any time) or non-traditional student (all others).

Procedures

The primary investigator of this study was a graduate psychology student in the MAGP program at the University of North Florida. All data were collected through a world wide web surveying program called Web Surveyor. The program was accessed through a link sent out in e-mail, and allowed each participant to complete surveys on computers from any location.

An e-mail was sent to students, inviting them to participate in the study. This e-mail explained the purpose of the study and asked recipients to participate, telling them that they can withdraw at any point. Consent was also obtained through this e-mail. The end of the e-mail read, "By clicking here (link) you acknowledge that you are at least 18 years of age and do hereby give your consent to participate in this study. Consent may be withdrawn at any time by closing the questionnaire window" (See Appendix A for full e-
mail). Participants were then directed to the survey. As they completed the survey, they were told their progress and, upon completion, asked to submit the survey. Once submitted the data was available to the reviewers and later exported into SPSS for analysis.

Results

Participants and Demographic Variables

Participants in this study were 486 students of varying levels of enrollment at the University of North Florida. The number of total participants used for this study was 501. Fifteen participants were removed from the sample because they reported that they were not college students. The mean age of the sample was 22.40 (SD = 6.34). The majority was comprised of 74.9% of the sample, with 24.9% minorities, and one not reporting. All other demographic statistics are reported in Table 1.

Bivariate Relationships

Pearson correlations were computed for each variable (social connectedness, perceived stress, health symptoms, perceived social support, and the three social support subscales: significant other, family, and friend) to test relationships with one another. Significant correlations and their coefficients are reported below.

Social connectedness was negatively correlated with perceived stress \( r(472) = -0.41, p < .001 \) and health symptoms \( r(454) = -0.25, p < .001 \), and positively correlated with social support \( r(486) = 0.49, p < .001 \). There were also positive correlations between connectedness and support from significant other, family, and friends \( r's (486) = 0.33, 0.38, \) and \( 0.47 \) respectively, \( p's < .001 \).
Perceived stress was positively correlated with health symptoms \(r(440) = .37, p < .001\), and negatively correlated with social support \(r(472) = -.25, p < .001\) and support from significant other, family, and friends \(r'\)s \(472) = -.17, -.22, \text{ and } -.21 \) respectively, \(p'\)s \(< .001\). Health symptoms were negatively correlated with social support \(r(454) = -.19, p < .001\) and support from family and friends only \(r'\)s \(454) = -.17 \text{ and } -.22 \) respectively, \(p'\)s \(< .001\). Through these bivariate analyses, social connectedness emerged as a stronger predictor of both perceived stress and health symptoms because of higher correlations. This predictor strength was considered in subsequent analyses, with social connectedness being the focus of the mediator model (discussed later).

Depression (measured by the CESD-R) and prior diagnosis were used as controls in this study, and therefore tested for correlations with the other main variables. Depression was positively correlated with perceived stress \(r(446) = .59, p < .001\) and health symptoms \(r(430) = .43, p < .001\), and negatively correlated with connectedness \(r(460) = -.49, p < .001\), social support \(r(460) = -.29, p < .001\), and support from significant other, family, and friends \(r'\)s \(460) = -.21, -.23, \text{ and } -.24 \) respectively, \(p'\)s \(< .001\).

Age was weakly, but significantly correlated with perceived Stress \(r(472) = -.17, p < .001\) and social support from friends only \(r(486) = -.09, p < .05\). Because of these weak analyses, age was not entered into subsequent regression analyses as a control or covariate.

Analyses of Variance (ANOVAs) were computed to test for group differences and compare means for categorical demographic variables (ethnicity, gender, full-time or part-time status, classification, traditional or non-traditional status, GPA, Greek
involvement, and relationship status) and connectedness, support, stress, and health symptoms. All means and standard deviations for the groups are reported in Table 1 for connectedness and support and Table 2 for stress and health symptoms.

Table 1. Average Social Connectedness and Social Support by Sociodemographic and Other Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>n</th>
<th>Social Connectedness</th>
<th>Social Support</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>Minority</td>
<td>118</td>
<td>30.09**</td>
<td>9.42</td>
</tr>
<tr>
<td>Majority</td>
<td>353</td>
<td>33.04</td>
<td>8.61</td>
</tr>
<tr>
<td>Female</td>
<td>357</td>
<td>32.24</td>
<td>8.95</td>
</tr>
<tr>
<td>Male</td>
<td>115</td>
<td>32.29</td>
<td>9.06</td>
</tr>
<tr>
<td>Freshman</td>
<td>98</td>
<td>32.07</td>
<td>8.85</td>
</tr>
<tr>
<td>Upperclassman</td>
<td>341</td>
<td>32.54</td>
<td>8.73</td>
</tr>
<tr>
<td>Nontraditional Student</td>
<td>134</td>
<td>32.95</td>
<td>8.96</td>
</tr>
<tr>
<td>Traditional Student</td>
<td>305</td>
<td>32.23</td>
<td>8.76</td>
</tr>
<tr>
<td>Full-time Student</td>
<td>45</td>
<td>32.77*</td>
<td>8.63</td>
</tr>
<tr>
<td>Part-time Student</td>
<td>394</td>
<td>29.64</td>
<td>9.98</td>
</tr>
<tr>
<td>Single</td>
<td>199</td>
<td>31.84</td>
<td>9.24</td>
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<tr>
<td>Relationship</td>
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<tr>
<td>GPA &lt;2.5</td>
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<td>30.45</td>
<td>9.15</td>
</tr>
<tr>
<td>GPA &gt;=2.5</td>
<td>388</td>
<td>32.71</td>
<td>8.75</td>
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<tr>
<td>Greek Involvement</td>
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<td>34.89</td>
<td>8.25</td>
</tr>
<tr>
<td>No Greek Involvement</td>
<td>394</td>
<td>32.23</td>
<td>8.76</td>
</tr>
</tbody>
</table>

Note: * p<.05, **p<.01, ***p<.001

Results show that the majority group reported experiencing more connectedness \[F(1, 469) = 9.89, p < .01\], more support overall \[F(1, 469) = 10.92, p < .01\], and more support from family \(M= 5.89, SD= 1.22\) \[F(1, 469) = 15.93, p < .001\] and friends \(M=\]
5.83, SD= 1.07) \(F(1, 469) = 4.27, p < .05\) than the minority group (family support \(M= 5.36, SD= 1.42\) and friend support \(M= 5.83, SD= 1.23\)). However, minority and majority ethnic groups did not differ in perceived stress, health symptoms, or support from significant other. Females reported having more stress \(F(1, 470) = 15.78, p < .001\) and higher health symptom severity \(F(1, 452) = 11.59, p < .01\) than did males. No other gender differences were significant.

Table 2. Average Perceived Stress and Health Symptoms by Sociodemographic and Other Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>n</th>
<th>M</th>
<th>SD</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minority</td>
<td>118</td>
<td>18.51</td>
<td>6.33</td>
<td>5.83</td>
<td>4.36</td>
</tr>
<tr>
<td>Majority</td>
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<td>6.19</td>
<td>6.71</td>
<td>4.58</td>
</tr>
<tr>
<td>Female</td>
<td>357</td>
<td>19.40***</td>
<td>6.33</td>
<td>6.90**</td>
<td>4.47</td>
</tr>
<tr>
<td>Male</td>
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<td>16.76</td>
<td>5.81</td>
<td>5.25</td>
<td>4.49</td>
</tr>
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<td>Freshman</td>
<td>98</td>
<td>20.62**</td>
<td>6.49</td>
<td>7.21</td>
<td>4.40</td>
</tr>
<tr>
<td>Upperclassman</td>
<td>341</td>
<td>18.22</td>
<td>6.23</td>
<td>6.36</td>
<td>4.56</td>
</tr>
<tr>
<td>Nontraditional Student</td>
<td>134</td>
<td>17.31**</td>
<td>6.15</td>
<td>6.34</td>
<td>4.26</td>
</tr>
<tr>
<td>Traditional Student</td>
<td>305</td>
<td>19.37</td>
<td>6.37</td>
<td>6.68</td>
<td>4.65</td>
</tr>
<tr>
<td>Full-time Student</td>
<td>45</td>
<td>18.77</td>
<td>6.28</td>
<td>6.47</td>
<td>4.46</td>
</tr>
<tr>
<td>Part-time Student</td>
<td>394</td>
<td>18.27</td>
<td>6.82</td>
<td>7.11</td>
<td>5.01</td>
</tr>
<tr>
<td>Single</td>
<td>199</td>
<td>19.02</td>
<td>6.42</td>
<td>6.11</td>
<td>4.71</td>
</tr>
<tr>
<td>Relationship</td>
<td>239</td>
<td>18.49</td>
<td>6.33</td>
<td>6.94</td>
<td>4.37</td>
</tr>
<tr>
<td>GPA &gt;=2.5</td>
<td>49</td>
<td>20.39</td>
<td>7.01</td>
<td>6.37</td>
<td>5.04</td>
</tr>
<tr>
<td>GPA&lt;2.5</td>
<td>388</td>
<td>18.54</td>
<td>6.24</td>
<td>6.57</td>
<td>4.48</td>
</tr>
<tr>
<td>Greek Involvement</td>
<td>45</td>
<td>19.22</td>
<td>5.29</td>
<td>5.89</td>
<td>5.06</td>
</tr>
<tr>
<td>No Greek Involvement</td>
<td>394</td>
<td>18.69</td>
<td>6.48</td>
<td>6.56</td>
<td>4.48</td>
</tr>
</tbody>
</table>

*Note:* *p<.05, **p<.01, ***p<.001
Full-time students reported having more connectedness \( F(1, 437) = 5.13, p < .05 \), more overall Support \( F(1, 437) = 7.57, p < .01 \), more support from significant other \( M = 5.98, SD = 1.26 \) \( F(1, 437) = 4.54, p < .05 \), and friends \( M = 5.84, SD = 1.11 \) \( F(1, 437) = 6.372, p < .05 \) than part-time students (significant other support \( M = 5.55, SD = 1.61 \); friend support \( M = 5.39, SD = 1.20 \)). Freshmen reported having higher levels of stress \( F(1, 437) = 11.09, p < .01 \) than other classes. Traditional students reported experiencing more stress \( F(1, 437) = 9.89, p < .01 \) than non-traditional students.

Students with GPAs 2.5 and above reported having more overall support \( F(1, 435) = 8.34, p < .01 \) and more support from significant other \( M = 6.01, SD = 1.26 \) \( F(1, 435) = 8.84, p < .01 \) and friends \( M = 5.84, SD = 1.08 \) \( F(1, 435) = 7.58, p < .01 \) than those with GPAs below 2.5 (significant other support \( M = 5.42, SD = 1.51 \); friend support \( M = 5.37, SD = 1.40 \)). Students who are involved in a fraternity or sorority reported having more support from friends only \( M = 6.10, SD = 0.92 \) \( F(1, 437) = 3.89, p < .05 \) than those who were not involved \( M = 5.75, SD = 1.15 \). Participants who were in a relationship had more overall support \( F(1, 436) = 17.892, p < .001 \) and support from significant other \( M = 6.40, SD = 0.86 \) \( F(1, 436) = 75.53, p < .001 \) than single individuals (significant other support \( M = 5.39, SD = 1.52 \)). No other demographic effects were significant.

**Hypotheses Testing and Mediating Model**

Hierarchical Linear Regression Analyses were conducted to test the three main hypotheses of the current investigation. First, controlling for depression, gender, prior diagnosis, full-time/part-time status, classification, and traditional/non-traditional status, ethnicity was regressed onto connectedness, support, stress, and health symptoms. The
investigation expected to see minorities experiencing more stress than majorities, along with less connection and support. It was also expected that ethnic groups would differ in health symptoms. As shown in Table 3, ethnicity emerged as a predictor of connectedness \( [B = -0.12, p < 0.01] \) and support \( [B = -0.15, p < 0.01] \). Ethnicity and other variables accounted for a significant amount of the variance in social connectedness, yielding a total model \( R^2 \) of 27.9\% \( (p < 0.01) \), and social support, with a total model \( R^2 \) of 16.4\% \( (p < 0.01) \). Ethnicity was also regressed onto stress and health symptoms as part of the first hypothesis. Table 4 shows that ethnicity predicted stress \( [B = 0.09, p < 0.05] \), and all variables accounted for a significant amount of the variance in stress, producing a model \( R^2 \) of 37.7\% \( (p < 0.05) \). The model for ethnicity on health symptoms did not yield significant results.

Table 3. Summary of Hierarchical Regression Analysis on Ethnic Predictors of Social Connectedness and Social Support

<table>
<thead>
<tr>
<th>Variable</th>
<th>Social Connectedness</th>
<th>Social Support</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>( \beta )'s</td>
<td>( \Delta R^2 )</td>
</tr>
<tr>
<td>Step 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depression</td>
<td>-0.50***</td>
<td>-0.28***</td>
</tr>
<tr>
<td>Prior Diagnosis</td>
<td>0.01</td>
<td>0.25***</td>
</tr>
<tr>
<td>Step 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Greek Involvement</td>
<td>-0.08*</td>
<td>-0.08</td>
</tr>
<tr>
<td>Part-time Student</td>
<td>-0.09*</td>
<td>-0.13**</td>
</tr>
<tr>
<td>Relationship</td>
<td>0.03</td>
<td>0.02*</td>
</tr>
<tr>
<td>Step 3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Minority</td>
<td>-0.12**</td>
<td>-0.15**</td>
</tr>
<tr>
<td></td>
<td>0.01**</td>
<td>0.16</td>
</tr>
</tbody>
</table>

\( R^2 \) 0.28 0.16

Note: Standardized \( \beta \)'s reported; \* \( p < .05 \), \** \( p < .01 \), \*** \( p < .001 \).
Table 4. Summary of Hierarchical Regression Analysis on Ethnic Predictors of Stress and Health Symptoms

<table>
<thead>
<tr>
<th>Variable</th>
<th>Stress PSS</th>
<th>Health Symptoms PHQ15</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>β's</td>
<td>ΔR²</td>
</tr>
<tr>
<td><strong>Step 1</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depression</td>
<td>0.56***</td>
<td>0.36***</td>
</tr>
<tr>
<td>Female</td>
<td>-0.12**</td>
<td></td>
</tr>
<tr>
<td>Prior Diagnosis</td>
<td>0.05</td>
<td>0.02*</td>
</tr>
<tr>
<td><strong>Step 2</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Freshman</td>
<td>0.06</td>
<td>0.02*</td>
</tr>
<tr>
<td>Part-time Student</td>
<td>-0.03</td>
<td>-0.01</td>
</tr>
<tr>
<td>Traditional</td>
<td>-0.08</td>
<td></td>
</tr>
<tr>
<td><strong>Step 3</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Minority</td>
<td>0.09*</td>
<td>0.08*</td>
</tr>
<tr>
<td><strong>R²</strong></td>
<td>0.38</td>
<td>0.26</td>
</tr>
</tbody>
</table>

Note: Standardized β's reported; * p<.05, **p<.01, ***p<.001.

To test the second Hypothesis, using the same controls as above and ethnicity, connectedness and support were regressed onto stress. This hypothesis stated that social connectedness and social support would account for a significant amount of the variance in stress. Table 5 displays the changes in the regression coefficient at each level of the analysis. When added in, connectedness remained a predictor for stress [β = -0.15, p<.01], but support did not. Overall, though, the variables combined accounted for a significant amount of the variance in Stress, R² = 40.0% (p < .001). Because support did not continue to predict stress when other variables were held constant, it was taken out of the mediating model.
Table 5. Hierarchical Regression Analysis Summary for Social Connectedness and Social Support Predictors of Perceived Stress

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>SEM</th>
<th>β</th>
<th>R²</th>
<th>ΔR²</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depression</td>
<td>0.26</td>
<td>0.02</td>
<td>0.56***</td>
<td></td>
<td>0.36</td>
</tr>
<tr>
<td>Gender</td>
<td>-1.76</td>
<td>0.57</td>
<td>-0.12**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prior Diagnosis</td>
<td>0.25</td>
<td>0.19</td>
<td>0.05</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Step 2</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Part-time Student</td>
<td>-0.60</td>
<td>0.81</td>
<td>-0.03</td>
<td></td>
<td>0.37</td>
</tr>
<tr>
<td>Freshman</td>
<td>0.86</td>
<td>0.61</td>
<td>0.06</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nontraditional</td>
<td>-1.08</td>
<td>0.57</td>
<td>-0.08</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Step 3</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Minority</td>
<td>1.29</td>
<td>0.56</td>
<td>0.09*</td>
<td></td>
<td>0.38</td>
</tr>
<tr>
<td><strong>Step 4</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social Connectedness</td>
<td>-0.11</td>
<td>0.03</td>
<td>-0.15**</td>
<td></td>
<td>0.40</td>
</tr>
<tr>
<td>Social Support</td>
<td>-0.30</td>
<td>0.28</td>
<td>-0.05</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note: Standardized β's reported; *p<.05, **p<.01, ***p<.001.*

Analyses showing strong relationships between social connectedness, perceived stress, and health symptoms set the stage for a mediational analysis according to procedures outlined by Baron and Kenny (1986). Specifically: 1) A relationship was found between the predictor variable (social connectedness) and the mediating variable (perceived stress) \( B = -0.17, p<.001 \); 2) the mediator (perceived stress) and criterion (health symptoms) were strongly associated as evidenced by a significant correlation and hierarchical linear regressions controlling for depression, gender, prior diagnosis, full-time or part-time status, classification, traditional or non-traditional status, and ethnicity \( B = 0.13, p<.05 \); 3) the relationship between the predictor variable (social
connectedness) and the criterion variable (health symptoms) also was established with hierarchical linear regression analysis controlling for the above mentioned factors \([B = -0.10, p<.05]\). The final stage in the test of a mediational model is to simultaneously regress the predictor (social connectedness) and mediator (perceived stress) onto the criterion variable (health symptoms). A hierarchical linear regression analysis, controlling for sociodemographic variables, demonstrated that social connectedness \([B = -0.07, p=.16]\) was no longer related to health symptoms after accounting for perceived stress \([B = 0.12, p<.05]\). Therefore, it can be concluded that perceived stress mediates the relationship between social connectedness and health symptoms. Table 6 shows the coefficients from step four of this regression.

*Table 6. Hierarchical Regression Analysis Summary for Stage 4 of Mediation Analysis: Perceived Stress and Connectedness Predictors of Health Symptoms (Somatization)*

<table>
<thead>
<tr>
<th>Step 1</th>
<th>Variable</th>
<th>(B)</th>
<th>(SEB)</th>
<th>(\beta)</th>
<th>(R^2)</th>
<th>(\Delta R^2)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Depression</td>
<td>0.13</td>
<td>0.01</td>
<td>0.40***</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Gender</td>
<td>-0.76</td>
<td>0.45</td>
<td>-0.07</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Diagnosis Total</td>
<td>0.81</td>
<td>0.15</td>
<td>0.24***</td>
<td>0.26</td>
<td>0.26***</td>
</tr>
<tr>
<td>Step 2</td>
<td>Part-time Student</td>
<td>-0.20</td>
<td>0.67</td>
<td>-0.01</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Freshman</td>
<td>0.40</td>
<td>0.49</td>
<td>0.04</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Nontraditional</td>
<td>0.12</td>
<td>0.46</td>
<td>0.01</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 3</td>
<td>Minority</td>
<td>-0.65</td>
<td>0.46</td>
<td>-0.06</td>
<td>0.26</td>
<td>0.00</td>
</tr>
<tr>
<td>Step 4</td>
<td>Perceived Stress</td>
<td>0.08</td>
<td>0.04</td>
<td>0.12*</td>
<td>0.28</td>
<td>0.01*</td>
</tr>
<tr>
<td></td>
<td>Social Connectedness</td>
<td>-0.04</td>
<td>0.03</td>
<td>-0.07</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note: Standardized \(\beta\)'s reported; *\(p<.05\), **\(p<.01\), ***\(p<.001\).*
Discussion

Consistent with previous findings, social connectedness was correlated positively with support and negatively with stress and health symptoms. Support was negatively correlated with stress and health symptoms as well. These results suggest that individuals with more connectedness also have more support, less stress, and less somatic symptoms; and people high in support experience less stress and somatic symptoms as well (Lee et al., 2002; Moller et al., 2003; Yeh & Inose, 2003). Stress was positively correlated with health symptoms, suggesting that individuals with higher stress also report having more somatic symptoms.

Hypothesis one was partially supported for the relationship between ethnicity and outcomes (social connectedness, social support, stress, and health symptoms). Controlling for other factors, ethnicity remained a predictor for social connectedness, social support, and stress, suggesting that it individually influences social ratings and stress levels in students. Ethnicity did not, however, predict health symptom occurrence.

The second hypothesis was supported for connectedness and support predicting stress and health symptoms. When other variables were controlled, connectedness continued to predict stress. This shows that connectedness is truly a protective factor against stress on its own. In fact, connectedness proved to be a stronger predictor of stress with a stronger relation than did support. This suggests that it is not only one's interpersonal relationships that influence his or her levels of psychological effects. But, one's global sense of belonging and connection may prevent negative psychological outcomes along with (and even more than) support.

Hypothesis three was supported, and all four stages satisfied. Results showed that
when stress and connectedness were simultaneously regressed onto health symptoms, the relationship between connectedness and health symptoms was no longer significant. This suggests that social connectedness influences one’s experiences of health symptoms, but this depends on one’s experiences of stress.

In a college population, social connectedness is an important factor because it changes as a function of one’s activities on campus and beliefs. Full-time students reported experiencing more connectedness than part-time students. This may be because these students have more social opportunities available to them, being on campus more often and for more time. The majority group reported feeling more connected. This shows that the majority group feels that they fit into the world around them and are more secure in their social environment that the minority group. The ethnicity difference finding has important implications, and was considered in subsequent analyses to test its relationship to outcome variables with other demographic controls.

As far as social support and its subscales, full-time students and students with GPAs 2.5 and above reported feeling more overall social support, significant other support, and friend support than their counterparts. Students involved in a fraternity or sorority reported more friend support than those not involved. This result suggests that people involved in Greek clubs feel that they have more friends there for support than those who are not involved. People in relationships reported having more overall support and significant other support. People who are in a relationship, married, or cohabitating feel that in general, they have people to call on when in need and have good interpersonal ties. Also, they feel that their significant others are there for them, possibly because, in this group, they have a pronounced, steady relationship with another person to whom
they referred. The majority group reported having more overall support, family support, and friend support. This suggests that Whites feel a greater sense of relation to specific sources (family and friends).

Social, school, and background factors contributed to stress and health symptoms in different and interesting ways. Freshmen and traditional students reported feeling more stress than their counterparts. This suggests that students who are in transitional phase from high school to college feel more stress than students who are past the transitional phase (sophomores, juniors, seniors, etc.). This also means that those who have continuously pursued education experience more stress than individuals who have taken a break at some point. Females reported experiencing more stress and having more health symptoms (and symptom severity) than males. These factors (full-time, GPA, fraternity or sorority, and relationship) may have social implications, may strengthen one’s social appraisal, and lessen psychological effects, especially when combined.

Demographic correlations revealed that people with depressive symptoms experience more stress and somatic symptoms, but less support and connectedness. Depression correlations, affecting stress and social factors, were consistent with past research findings (Williams & Galliher, 2006; Bisconti & Bergeman, 1999; Donald, et al., 2006). Age was related to stress and friend support, with younger students reporting higher stress levels, but more support from family only. It is interesting to note that depression accounted for a relatively large amount of the variance in stress and health symptoms compared to ethnicity, social connectedness, and social support (backing research of the past). But, other variables still added to the regressions as expected.

There were some limitations in the present study. For example, there may be other
school or social variables that affect the outcome variables that were not assessed. These include living on campus or being a commuter, or being involved in other extra-curricular activities. Also, although the overall sample was relatively large, the groups compared for sociodemographic and school variables were not evenly dispersed. For example, there were far more part-time than full-time students and fewer students involved in a Greek organization that those not involved. Future research should assess these variables in relation to others that may weigh into one’s social and psychological experiences such as one’s self-assessment of his or her physiological symptoms and possible somatization. This would suggest not only that stress, social factors, and health symptoms co-occur, but tease out those occurrences of symptoms brought on by the other factors. Also, future research could have participants elaborate (through open-ended questions) on when health symptoms occur and how they may be a direct result of stresses. Research should consider not only support from others, but an individual’s feeling of connectedness as premises for psychological outcomes.

Overall, demographics, connectedness, support, stress, and health symptoms are interconnected and influence one another. Stress is not only related to people’s perceived level of interpersonal resources, but their feelings of fitting into the world around them everyday. Furthermore, social connectedness is related to the occurrence and severity of health symptoms through one’s stress level. This suggests that one’s connectedness influences his or her experience of health symptoms as a function of the individual’s stress level. More connected individuals have lower levels of stress, suggesting it is important for individuals to become involved in and feel a part of their communities in order to buffer against the effects of stress and, consequently, occurrence of symptoms.
Appendix A

Consent and Invitation E-mail

You are invited to participate in a study on stress. Your responses to all of the questionnaires on this website are entirely voluntary and will be used, anonymously, in research by Dr. Lori Lange and in the Psychology Department at the University of North Florida. You will not be penalized or lose any benefits to which you are otherwise entitled for refusing to participate or withdrawing your consent to participate in this study. There has been no risk associated with participating in this or similar studies, hence, no foreseeable risks or discomforts are expected to occur. It will take you approximately 45-60 minutes to complete the questionnaires.

Our thanks to all who have used and continue to use the questionnaires on this site. Your responses are being used, anonymously, by researchers to add to our understanding of stress and to develop a stress assessment instrument that can be used by individuals to better understand their personal stress. If you have any questions or would like more information regarding the research we are conducting, please visit the contact us page on this website. If you have questions regarding your rights as a research participant please contact, Dr. Kathleen Bloom, Chair, UNF Institutional Review Board, (904) 620-2684.

By clicking here (link) you acknowledge that you are at least 18 years of age and do hereby give your consent to participate in this study. Consent may be withdrawn at any time by closing the questionnaire window.
Appendix B

Scales

Perceived Stress Scale 10

The questions in this scale ask you about your feelings and thoughts during the last month. In each case, you will be asked to indicate how often you felt or thought a certain way. Although some of the questions are similar, there are differences between them and you should treat each one as a separate question. That is, don't try to count up the number of times you felt a particular way, but rather indicate the alternative that seems like a reasonable estimate.

<table>
<thead>
<tr>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>never</td>
<td>almost never</td>
<td>sometimes</td>
<td>fairly often</td>
<td>very often</td>
</tr>
</tbody>
</table>

1. In the last month, how often have you been upset because of something that happened unexpectedly?
2. In the last month, how often have you felt that you were unable to control the important things in your life?
3. In the last month, how often have you felt nervous and "stressed"?
4. In the last month, how often have you felt confident about your ability to handle your personal problems?
5. In the last month, how often have you felt that things were going your way?
6. In the last month, how often have you found that you could not cope with all the things that you had to do?
7. In the last month, how often have you been able to control irritations in your life?
8. In the last month, how often have you felt that you were on top of things?
9. In the last month, how often have you been angered because of things that happened that were outside of your control?
10. In the last month, how often have you felt difficulties were piling up so high you could not overcome them?

The Multidimensional Scale of Perceived Social Support (MSPSS)

7-pt Likert-type scale (1 = very strongly disagree to 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 emotion help and 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.

Social Connectedness

1 = agree
2 = slightly agree
3 = neutral
4 = slightly disagree
5 = disagree

1. I feel disconnected from the world around me.
2. Even around people I know, I don’t feel that I really belong.
3. I feel so distant from people.
4. I have no sense of togetherness with my peers.
5. I don’t feel related to anyone.
6. I catch myself losing all sense of connectedness with society.
7. Even among my friends, there is no sense of brother/sisterhood.
8. I don’t feel I participate with anyone or any group.

Patient Health Questionnaire- 15

Please choose the response which best reflects how much the symptom has bothered you over the past month.

0 = Not bothered at all
1 = Bothered a little
2 = Bothered a lot

1. Joint or limb pain
2. Dizziness
3. Fatigue
4. Headaches
5. Back pain
6. Abdominal pain
7. Chest pain
8. Breathing trouble
9. Fainting
10. Gas or indigestion, nausea
11. Sleeping trouble
12. Palpitations
13. Menstrual problems
14. Diarrhea (constipation)
15. Sexual pain/problems
Center for Epidemiological Studies Depression Scale- Revised

Below is a list of the ways you might have felt or behaved. Please check the boxes to tell me how often you have felt this way in the past week or so.

**LAST WEEK**

<table>
<thead>
<tr>
<th></th>
<th>Not at all</th>
<th>1-2 days</th>
<th>3-4 days</th>
<th>5-7 days</th>
<th>Nearly every day for 2 weeks</th>
</tr>
</thead>
<tbody>
<tr>
<td>My appetite was poor.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I could not shake off the blues.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I had trouble keeping my mind on what I was doing.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I felt depressed.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My sleep was restless.</td>
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<td>I felt sad.</td>
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<td>I could not get going.</td>
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<tr>
<td>Nothing made me happy.</td>
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<tr>
<td>I felt like a bad person.</td>
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<td>I lost interest in my usual activities.</td>
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<tr>
<td>I slept much more than usual.</td>
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<td>I felt like I was moving too slowly.</td>
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<tr>
<td>I felt fidgety.</td>
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<tr>
<td>I wished I were dead.</td>
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<tr>
<td>I wanted to hurt myself.</td>
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<tr>
<td>I was tired all the time.</td>
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<tr>
<td>I did not like myself.</td>
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<tr>
<td>I lost a lot of weight without trying to.</td>
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<tr>
<td>I had a lot of trouble getting to sleep.</td>
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<tr>
<td>I could not focus on the important things.</td>
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</tbody>
</table>

Demographic and Health Questionnaire

What is your gender?
(1) Female
(2) Male

What is your height? _____ feet _____ inches

What is your weight? ________ lbs.

What is your ethnicity?
(1) White/Caucasian
(2) Black/African American
(3) Hispanic/Latino
(4) Asian/Pacific Islander
(5) Other/Multiple ethnicities ____________________
What is your age? ________ years
Date of birth? __/__/____
Are you a currently a student at a college or university?
   (1) No
   (2) Yes
      If Yes,
      a) Are you:
         (1) A full time student
         (2) A part time student
      b) Are you a student at UNF?
         (1) yes
         (2) no: enter the name of your school: __________
      c) What is your major? __________ (select from a list of UNF majors)
      d) What is your current cumulative GPA
         (1) less than 2.00
         (2) 2.00 - 2.49
         (3) 2.50 - 2.99
         (4) 3.00 - 3.49
         (5) 3.50 - 4.00
      d) What is your student classification?
         (1) Freshman
         (2) Sophomore
         (3) Junior
         (4) Senior
         (5) Post Baccalaureate
         (6) Graduate student
         (7) Doctoral student
         (8) Special
      e) Did you enroll in college directly following high school?
         (1) yes
         (2) no
      f) Did you stop attending college for one semester or more at any time?
         (1) yes
         (2) no
Mother's education level (highest level completed):
   (1) Elementary
   (2) High School
   (3) Some College
   (4) Technical
   (5) College Degree
   (6) Graduate/Professional School
Father's education level (highest level completed):
   (1) Elementary
   (2) High School
   (3) Some College
   (4) Technical
(5) College Degree  
(6) Graduate/Professional School

Are you currently:  
(1) Single  
(2) In a Relationship  
(3) Married  
(4) Separated  
(5) Divorced  
(6) Widowed  
(7) Cohabitating  

What is your employment status?  
(1) Full-time  
(2) Part-time  
(3) Unemployed  
(4) Retired  

What is your household income?  
(1) Less than $20,000  
(2) $20,000 to $50,000  
(3) $50,000 to $100,000  
(4) More than $100,000  

Number of children (including adopted, foster, and step-children): _____  

Have you been diagnosed with any of the following (check all that apply)?  
Asthma or allergies  
Anxiety disorder (e.g., obsessive-compulsive disorder, generalized anxiety disorder)  
Thyroid or endocrine disorder  
Diabetes  
Depression  
High blood pressure or Hypertension  
Heart disease or heart condition  
Cancer  
Eating Disorder  
Chronic kidney or bladder problems  
Chronic Back problems  
Autoimmune disease  
Acne or skin problems  
Colitis or Irritable bowel syndrome  
Migraine headache  
Arthritis or degenerative joint disease  
Seizure disorder or epilepsy  
Chronic fatigue  
Spinal cord injury  
Stroke  
Other: ______________________

In general, would you say your health is:  
(1) Excellent
(2) Very good
(3) Good
(4) Fair
(5) Poor

How would you rate your stress level?

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<tbody>
<tr>
<td>(low)</td>
<td>(high)</td>
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</table>

Breathing Pattern:
Sit up straight with your back against a chair and put one hand on the upper part of your chest and the other hand on your abdomen over your navel. Become aware of your breathing over a few minutes and notice the movement of your hands as you breathe in and out. Which hand moves more?

The one on my:
- __Abdomen
- __Chest
- __Both

Select items that you consider to be the top stressors in your life (check all that apply):
- Not enough time or time management problems
- Relationships
- Physical health issues
- Traffic
- Information overload or technostress
- Terrorism, war, world issues
- Urban crowding, noise, pollution, violence
- Being treated unfairly
- Too many choices
- Family expectations and family life
- Expectations for myself
- Employment decisions
- Finances
- School pressures
- Living arrangements
- Loneliness
- Being treated unfairly
- Stereotypes and discrimination
- Sexism or sexual harassment
- Prejudice
- Isolation and alienation (feeling left out) (BSSI)
- Social life on campus (BSSI)
- Limited tolerance for culture differences on campus (BSSI)
- Being included in social events on campus (BSSI)
- Limited diversity among students (BSSI)
- Limited recognition of diverse cultures on campus (BSSI)
- Lack of a support system (BSSI)
- Race relations (BSSI)
- Poor academic advising (BSSI)
Poor interactions with faculty (BSSI)
Interpersonal relationships (relationship difficulties) (BSSI)
Other: ______________________

Please indicate the average number of hours you spend each week on the following activities

a. exercising/sports
b. watching TV
c. partying
d. playing video games
e. studying
f. student clubs/groups
g. housework/childcare
h. volunteer work
i. working/employment
j. commuting

Please indicate the time you typically go to bed during the week (M-F): _____
weekend: _____

Please indicate the time you typically wake up during the week (M-F): _____ weekend: _____

Are you satisfied with the amount of sleep you get?
  (1) yes
  (2) no

How often do you have difficulty falling asleep?
  (1) frequently
  (2) sometimes
  (3) seldom
  (4) never

How often do you have trouble waking up while sleeping?
  (1) frequently
  (2) sometimes
  (3) seldom
  (4) never
References


SANYA WHITTAKER

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Lyons, GA 30436
(912) 484 - 1660
s.whittaker@unf.edu

EDUCATION

Spring 2007 - Spring 2008  University of North Florida  Jacksonville, FL
Master's of Arts
• Concentration: Psychology
Graduated: May, 2008

Fall 2006  Augusta State University  Augusta, GA
Master's of Science
• Concentration: Clinical Psychology
Anticipated Graduation: N/A

2002 - 2006  Saint Leo University  Saint Leo, FL
Bachelor's of Arts
• Major: Psychology
• Minor: Sociology
• Graduated: May, 2006

RESEARCH EXPERIENCES

Spring 2007-present  University of North Florida  Jacksonville, FL
• Supervised Research course/ Master's Thesis
• Worked with Dr. Lange in the Health Psychophysiology Lab conducting study on
  history of illness, physiological symptoms, and many social factors associated with
  one's level of perceived stress.
• Used this data for the development and writing of my thesis.

Fall 2006  Augusta State University  Columbus, GA
• Research Assistant
• Assisted CDC researchers in affiliation with the Army and Augusta State University
  researcher on base in Columbus, GA

Fall 2005  Saint Leo University  Saint Leo, FL
• Senior Seminar

36
- Conducted study on self-efficacy beliefs and goal orientations of undergraduate freshmen

**Fall 2005**
Saint Leo University
Saint Leo, FL
- As part of Industrial/Organizational Psychology course
- Conducted Applied Project on Occupational Commitment among Resident Assistants

**WORK EXPERIENCES**

**Spring 2007 - Fall 2007**
Jacksonville, FL
- Tutor: WHIZard Academy for Mathematics and English
- Duties include assigning in session work and homework for students, grading student assignments, maintaining student files and progress reports, interacting with parents, assisting young students with their assigned work in both math and English at different levels of difficulty, and keeping work area organized.

**Fall 2006**
Augusta, GA
- Graduate Assistantship: Augusta State University
- Worked as a graduate assistant in the Psychology Department of Augusta State University. Duties included Teaching Assistant and Research Assistant responsibilities from grading assignments to data entry and assisting with research.

**Fall 2005 - Spring 2006**
San Antonio, FL
- Work Study Employment: Saint Leo University Center for Online Learning
- Worked as a student assistant in the Veteran's Assistance department of Saint Leo University's Center for Online Learning. Duties included filing, organizing office systems and computer data entry.

**HONORS AND AWARDS**

**Fall 2004**
Saint Leo University
Saint Leo, FL
- Dean's List

**Spring 2002**
Springstead High School
Spring Hill, FL
- Who's Who Among American High School Students

**EXTRACURRICULAR ACTIVITIES**

2007-2008
University of North Florida
Jacksonville, FL
Media Services - Athletics
- crew member

2005-2006 Saint Leo University Saint Leo, FL

Campus Activity Board Member (CAB)
- member

2002-2003, 2005-2006 Saint Leo University Saint Leo, FL

Saint Leo University Gospel and Multicultural Choir
- member

2002-2004 Saint Leo University Saint Leo, FL

Saint Leo University Chorus
- member

2002 Saint Leo University Saint Leo, FL

Saint Leo University Cheerleading Squad
- Captain

PRESENTATIONS

April 2008 University of North Florida Daytona Beach, FL
Individual and Collaborative Influences of Social Connectedness, Social Support, and Demographic Factors on Perceived Stress and Health Symptoms
Lecture Presentation - Human Factors and Applied Psychology Conference - Accepted

April 2007 University of North Florida Daytona Beach, FL
Ethnic Differences in Social Connectedness, Perceived Social Support, and Perceived Stress
PowerPoint presentation, Human Factors and Applied Psychology Conference - Accepted

Spring 2006 Saint Leo University Saint Leo, FL
Goal Orientations and Self-efficacy Beliefs
Poster Session for Senior Seminar

Spring 2006

Saint Leo University
Saint Leo, FL

Goal Orientations and Self-efficacy Beliefs

Academic Excellence Day

OTHER EXPERIENCES

Spring 2008
University of North Florida
Jacksonville, FL

• Guest Lecture: Psychobiology
• Organized and executed lecture on Sleep to an undergraduate Psychobiology course.

Fall 2007
University of North Florida
Jacksonville, FL

• Guest Lecture: Stress Management
• Organized and executed lecture on Mind-Body Connections to an undergraduate Stress Management course.

Spring 2007
University of North Florida
Jacksonville, FL

• Guest Lecture: Stress Management
• Organized and executed lecture on Complimentary and Alternative Medicines (CAM) to an undergraduate Stress Management course.

REFERENCES

Upon Request