Walden University

College of Health Sciences

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Abstract

Stress, Anxiety, and Depression: Role of Campus Connectedness, Social Support, and Coping Among Nepalese Nursing Students

by

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Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

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Abstract

High levels of stress, anxiety, and depression (SAD) can adversely influence physical health, psychological well-being, and academic and clinical performance of nursing students. Numerous studies have identified the factors associated with SAD; however, a paucity of empirical research addresses the relationship of SAD with campus connectedness (CC), perceived social support (PSS), and coping. The purpose of this quantitative cross-sectional study, guided by Lazarus and Folkman's theory of stress, coping, and adaptation, was to determine the prevalence of SAD and examine its relationship with CC, PSS, and coping among undergraduate nursing students of Nepal. Survey research was conducted using depression anxiety stress scale, campus connectedness scale, the multidimensional scale for perceived social support, and brief cope inventory. Among 680 nursing students analyzed, the 51.7% reported moderate to extremely severe levels of SAD. A one-way multivariate analysis of variance revealed a statistically significant relationship among CC, PSS, and coping with SAD ($p < .001$). A discriminant analysis indicated that depression best discriminated the levels of CC and PSS. The levels of coping were found to be best discriminated by anxiety. The findings can be sourced to create awareness among educators and administrators of nursing colleges about the roles that campus connectedness, social support, and coping strategies play in the occurrence SAD. Future studies can focus on the need to establish mental health screening and social support services, such as counseling centers in nursing colleges, which may bring about a positive social change in the lives of nursing students.

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Dedication

I dedicate my Ph.D. dissertation to

- The God Almighty, my Heavenly Father: You provided me all that was necessary for the completion of this dissertation. You are my rock, my refuge, and my strength.
- My beloved Husband, Dr. Samson Prakash Retnaraj: You initiated the thought for pursuing higher studies in me. You always believed in me, supported me, encouraged me, and comforted me.
- My charming son, Prateek Joshua Samson: You took care of yourself and papa when I was away for the residencies to another country. I hope I have inspired you to tread on a difficult path.
- The Evangelical Friends Mission: I appreciate the prayer support, financial support and encouragement I received from God's people.
- My dearest mother: You have been my source of comfort, encouragement and prayers throughout this journey.
- All my hardworking students: I did it and you can do it too!

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To conclude, it will be incomplete if I do not express my thanks to all the participants, without whose participation, it would not have been possible for me to accomplish this research.

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Chapter 1: Introduction to the Study

Introduction

Psychological distress including stress, anxiety, and depression are current global problems (Bilgel & Bayram, 2014). Psychological distress can be viewed as an emotional disturbance that may affect the lives of the individuals on a daily basis (Mirowsky & Ross, 2002; Wheaton, 2007). College students experience high levels of stress, anxiety, and depression compared with the general population (Besser & Zeigler-Hill, 2014; Bewick, Koutsopoulou, Miles, Slaa, & Barkham, 2010; Gallagher, 2008; MacKean, 2011). Lifetime prevalence of stress, anxiety, and depression among adolescents and young adults range from 5% to 70% globally (Sahoo & Khess, 2010). The American College Health Association (2011) and Yamashita, Saito, and Takao (2012) noted that anxiety is the most common mental health problem reported by college students. Most undergraduate students transitioning to adulthood encounter stressful situations (Lei, Xiao, Liu, & Li, 2016) that may be responsible for a high rate of depression and anxiety among them (Amarasuriya, Jorm, & Reavley, 2015; Bayram & Bilgel, 2008; Ibrahim & Abdelreheem, 2015). Nursing is considered a stressful profession (Hamaideh & Ammouri, 2011). Stress, anxiety, and depression have been identified as significant conditions related to psychological distress during nursing education (Patterson, 2016). The literature indicates a high prevalence of psychological distress among nursing students (Basu, Sinha, Ahamed, Chatterjee, & Misra, 2016; Brown, Anderson-Johnson, & McPherson, 2016; Smith & Yang, 2017). Various research findings reveal that nursing

students are often exposed to high levels of stress when compared with students from other programs (Alzayyat & Al-Gamal, 2016; Bartlett, Taylor, & Nelson, 2016).

Excessive and prolonged stress can be harmful to students' academic performance and physical and psychological well-being (Beiter et al., 2015; Hamaideh, 2015; Singh, Junnarkar, & Sharma, 2015). Students who perceive high levels of stress may often become depressed (Dahlin & Runeson, 2007; Tosevski, Milovancevic, & Gajic, 2010). Students suffering from anxiety and depression may also be at risk of poor academic performance (Papazisis, Tsiga, Papanikolaou, Vlasiadis, & Sapountzi-Krepia, 2008). Likewise, data from the American College Health Association (2013) reveal that high levels of stress among students interfere with the academic performance and achievements. Conversely, Stupnisky, Perry, Renaud, and Hladkyj (2013) stated that students who exhibit a low level of stress do well academically. During the transition from adolescence to adulthood, the failure to use adaptive coping strategies may further result in stress, anxiety, and depression (Ribeiro et al., 2017).

Nursing students are the future health care professionals and have a significant role in providing physical and psychosocial support to their clients. Therefore, the level of psychological distress needs to be minimized (Dalir & Mazloum, 2012). The literature identifies three key factors, campus connectedness (Bales, Pidgeon, Lo, Stapleton, & Magyar, 2015; Jdaitawi, 2015; Lee, Keough, & Sexton, 2002; Lee & Robbins, 1995), social support (Alimoradi, Asadi, Asadbeigy, & Asadniya, 2014; Awang, Kutty, & Ahmad, 2014; Jibeen, 2015; Pidgeon, McGrath, Magya, Stapleton, & Lo, 2014; Roohafza et al., 2014; Yasin & Dzulkifli, 2010), and coping (Bales et al., 2015; Carver, 1997;

Lazarus & Folkman, 1984; Ni et al., 2010; Pidgeon et al., 2014) that may help in minimizing the prevalence of anxiety, stress, and depression among nursing students.

Turner (2007) noted that approximately three-quarters of undergraduate students experience depression, anxiety, or other psychological problems. In Nepal, no national data are available on the prevalence of mental health problems (Luitel et al., 2015). A recent study by Risal, Manandhar, Linde, Steiner, and Holen (2016) found high rates of anxiety and depression among the general population in Nepal. The authors suggested that depression and anxiety should be among the health care priorities in Nepal (Risal et al., 2016). Although limited studies in Nepal address the prevalence and factors related to stress, anxiety, and depression, findings from two published studies reveal high levels of depression (37.8% to 69.2%, $N = 332$) (Risal, Sanjel, & Sharma, 2016; Sigdel & Pokharel, 2015) among nursing students, whereas 77.5 % ($N = 169$) of those participating in the study reported moderate stress (Shrestha & Lama, 2014).

Many nursing students in Nepal do not seek professional help for psychological distress. As Cook (2007) mentioned, most universities provide limited services to students, which is also true in Nepal. Most nursing colleges do not have counseling services to support the students. Therefore, examining the role of campus connectedness, social support, and coping in protecting students from stress, anxiety, and depression is crucial. The findings of my study may indicate a low level of campus connectedness and high levels of stress among nursing students in Nepal and provide a basis for the need for college services that will contribute to positive social change.

In Chapter 1, I include the background of the study, the problem statement, the purpose of the study, research questions and hypotheses, a brief description of the therapeutic framework based on Lazarus and Folkman's (1984) theory of stress, coping, and adaptation, and the nature of the study reflecting on the research design. I also provide the conceptual and operational definitions of the concepts, assumptions, scope and delimitations, limitations, and the significance of my study. Finally, I summarize the chapter with the key components.

Background

Extensive literature exists on the concepts of stress, anxiety, and depression among college/university students including nursing students worldwide. These concepts have been studied independently as well as together with psychological distress in many studies. Nursing education and training are highly challenging and demanding and, as a result, previous research shows a high prevalence rate of stress, anxiety, and depression among nursing students (Bilgel & Bayram, 2014; Patterson, 2016; Tosevski et al., 2010). The multiple stressors identified in the literature include (a) hospital environment; (b) working with sick and dying patients; (b) relationship with peers, faculty, and patients; (c) examinations; (d) increased workload and assignments; and (e) lack of leisure time (Gibbons, Dempster, & Moutray, 2009; Pryjmachuk & Richards, 2008). Most studies reveal similar stressors among nursing students worldwide with a few changes depending on the culture.

Other factors that may play a significant role in the occurrence of stress, anxiety, and depression include the levels of campus connectedness, social support, and coping.

Connectedness, social support, and coping (Armstrong & Oomen-Early, 2009; Bales et al., 2015; Brandy, Penckofer, Solari-Twadell, & Velsor-Friedrich, 2015; Eckberg, Pidgeon, & Magyar, 2017; Lee et al., 2002; Pidgeon et al., 2014; Roohafza et al., 2016) protect individuals from stress and depression. The concept of coping and its relationship with stress and anxiety has been widely researched, whereas limited research has examined the role that campus connectedness plays in stress, anxiety, and depression. Lazarus and Folkman (1984) and Carver (1997) identified problem-based or active coping and emotion-based or avoidant coping. Literature has revealed that problem-based or active coping is negatively associated with stress, anxiety, and depression (Chang et al., 2007; van Berkel, 2009). On the contrary, emotion-based or avoidant coping has shown to have a positive association with stress, anxiety, and depression (van Berkel, 2009). The next researched factor influencing levels of stress, anxiety, and depression is perceived social support.

Documentation and recognition of social support is not a new concept in nursing but goes back as far as the 1930s (McKay, as cited in Sawatzky, 1998). The most common sources of social support include family and friends (Sawatzky, 1998). However, in a learning environment such as college, peer support and a sense of community are found to play a significant stress-buffering role (Sawatzky, 1998). Gurung (2006) defined *social support* as people's experience of being valued, respected, and cared for by those who are connected with them in life. Similar to coping, social support protects the person under stress (Cohen, 2004; Maulik, Eaton, & Bradshaw (2011). Roohafza et al. (2014) projected social support as an external factor that influences levels

of anxiety and depression and coping as an internal factor that affects the level of depression.

The concept of campus connectedness, which has been derived from social connectedness in the context of the college environment (Lee & Robbins, 1995; Lee et al., 2002), has not been studied extensively in relation to stress, anxiety, and depression. A few studies, though, indicated that in general, college students perceiving stronger connectedness to campus have a greater likelihood of success (Stebleton, Soria, & Huesman Jr., 2014). Earlier studies on social connectedness have indicated that people with low connectedness experience increased levels of stress (Anant, as cited in Levett-Jones, Lathlean, McMillan, & Higgins, 2007) and anxiety (Sargent et al., as cited in Levett-Jones et al., 2007). The limited research done among college students has shown a significant negative relationship between campus connectedness and stress, anxiety, and depression (Alimoradi et al., 2014; Bales et al., 2015; Eckberg et al., 2017; Jdaitawi, 2015; Laux, Luse, & Mennecke, 2016; Lee & Davis, 2000; Lee & Robbins, 1995; Pidgeon et al., 2014; Samuolis, Griffin, Mason, & Dekraker, 2017; Summers, Svinicki, Gorin, & Sullivan, 2002). However, the number of studies done to establish the relationship between campus connectedness and stress, anxiety, and depression may fail to provide strong evidence. Although scarce literature is found on sense of belongingness among nursing students, no study to date has investigated campus connectedness and its relationship with stress, anxiety, and depression. Limited literature is available on the relationship between campus connectedness, social support, and coping on stress, anxiety, and depression among nursing students (Horgan, Sweeney, Behan, & McCarthy,

2016). Because there was no published study done in Nepal that provided evidence regarding the role of campus connectedness and social support on stress, anxiety, and depression, the findings of this study will provide a baseline data on the prevalence of stress, anxiety, and depression among nursing students and their relationship with campus connectedness, social support, and coping.

Problem Statement

Nursing education is synonymous with expansive learning, rigorous training, and strict discipline that demands a high level of commitment from nursing students. The demands and rigors of the nursing curriculum may lead to psychological distress such as stress, anxiety, and depression among nursing students (Chernomas & Shapiro, 2013; Jimenez, Navia-Osorio, & Diaz, 2010; Ratanasiripong, Kaewboonchoo, Ratanasiripong, Hanklang, & Chumchai, 2015). Stress, anxiety, and depression may not only affect students' learning and clinical performance (Chernomas & Shapiro, 2013), but could also endanger the lives of patients under their nursing care. Thus, students may feel compelled to discontinue a course or program (Shelton, 2012). Depression may decrease the functions of nursing students and affect the nurse-patient relationship (Uras, Poggi, Rocco, & Tabolli, 2012). Early detection of potential depression among nursing students is crucial because depression can lead to low productivity, poor quality of life, and suicidal ideation (Ab Latif & Mat Nor, 2016; Manpreet & Maheshwari, 2015).

High levels of unresolved stress may be due to failure in using effective coping strategies, which may lead to problems such as anxiety and depression (Aldiabat, Matani, & Le Navence, 2014; Eisenbarth, Champeau, & Donatelle, 2013; Goff, 2011; Pidgeon et

al., 2014). The other factors that may influence stress, anxiety, and depression among nursing students may include campus connectedness (Armstrong & Oomen-Early, 2009) and social support (Pidgeon et al., 2014). Campus connectedness can be explained as a student's sense of belongingness in a university environment (Lee & Robbins, 1995), whereas social support is a kind of coping mechanism that helps to effectively manage stress (Lo, 2002; Payne, 2001). The literature provides evidence that campus connectedness and social support decrease the level of stress, anxiety, and depression among college students (Armstrong & Oomen-Early, 2009; Roohafza et al., 2014).

Although several studies and research information exist related to stress, anxiety, and depression among nursing students across many countries, national data on the prevalence of mental health problems such as stress, anxiety, and depression in Nepal are scarce (Luitel et al., 2015; Shakya et al., 2013). The two studies done among nursing students in Nepal show that 37.5% to 69.2% of nursing students reported experiencing depressive symptoms (Risal et al. 2016; Risal, Sanjel, & Sharma, 2016). The high levels of depression among nursing students in Nepal indicate the need for research in this area. Although the roles of social support in stress, anxiety, and depression have been studied in other countries, it has not been researched in Nepal. Mahat (1996) recommended conducting a study to examine the relationship between social support and stress. The concept of campus connectedness is relatively new and has not been researched in Nepal.

Purpose of the Study

My purpose in this nonexperimental, descriptive, correlational study was to determine the relationship of campus connectedness, perceived social support, and coping

with levels of stress, anxiety, and depression among nursing students in Nepal. I used a cross-sectional, quantitative design to examine the role of campus connectedness, social support, and coping on levels of stress, anxiety, and depression. I also explored the prevalence of stress, anxiety, and depression among undergraduate nursing students. The predictor variables in the study included campus connectedness, social support, and coping. The outcome variables in this study were stress, anxiety, and depression.

Research Questions and Hypotheses

RQ1: What is the relationship of campus connectedness with levels of stress, anxiety, and depression among nursing students in Nepal?

H_a1: There is a relationship of campus connectedness with levels of stress, anxiety, and depression among nursing students in Nepal.

H_01: There is no relationship of campus connectedness with levels of stress, anxiety, and depression among nursing students in Nepal.

RQ2: What is the relationship of perceived social support with levels of stress, anxiety, and depression among nursing students in Nepal?

H_a2: There is a relationship of perceived social support with levels of stress, anxiety, and depression among nursing students in Nepal.

H_02: There is no relationship of perceived social support with levels of stress, anxiety, and depression among nursing students in Nepal.

RQ3: What is the relationship of coping with levels of stress, anxiety, and depression among nursing students in Nepal?

H_a3: There is a relationship of coping with levels of stress, anxiety, and depression among nursing students in Nepal.

$H_0 3$: There is no relationship of coping with levels of stress, anxiety, and depression among nursing students in Nepal.

Theoretical Framework of the Study

The theoretical basis for my study was the theory of stress, coping, and adaptation authored by Professor Lazarus (Lazarus & Folkman, 1984). This theory deals with how individuals cope with a stressful situation. The major concepts of the theory include stress, coping, adaptation, stressors, person-environment relationship, and appraisal (Folkman & Lazarus, 1988; Lazarus & Folkman, 1984). The theory also focuses on the psychological response of an individual to stress such as anxiety and depression (McEwen & Wills, 2014). Although the theory of stress, coping, and adaptation has been derived from behavioral sciences, many nursing researchers have used it as a theoretical framework in their research worldwide (Lazarus & Folkman, 1984; McEwen & Wills, 2014). I used this theory to determine the coping strategies that the nursing students use. The theory may also establish the relationship between the concepts such as stress, coping strategies, and the psychological response of nursing students to their levels of perceived stress. I will explain in detail the theory of stress, coping, and adaptation regarding its origin, major theoretical propositions, its application in research, and rationale for theory application in Chapter 2.

Nature of the Study

The nature of this study was a quantitative, nonexperimental, cross-sectional, descriptive correlational design. First, in this study I examined the prevalence of stress, anxiety, and depression among nursing students. Such data required no experimental or quasi-experimental approach. Using depression anxiety stress scale (DASS-21) (Lovibond & Lovibond) I screened the prevalence of stress, anxiety, and depression). I measure other variables such as campus connectedness, social support, and coping by using the campus connectedness scale (CSS) (Lee & Robbins, 1995), the multidimensional scale of perceived social support (MSPSS) (Zimet, Dahlem, Zimet, & Farley, 1988) and the brief cope inventory (BCI) (Carver, 1997), respectively. Second, I examined the relationships among campus connectedness, social support, and coping with stress, anxiety, and depression. The descriptive correlational design focuses on the relationship between the study variables (Grove, Burns, & Gray, 2013).

I used this approach to describe the phenomenon of stress, anxiety, and depression to determine whether a relationship existed campus connectedness, social connectedness, and coping with stress, anxiety, and depression. Lazarus and Folkman's (1984) theory of stress, coping, and adaptation provided a framework to help analyze these relationships. I collected data from undergraduate bachelor of science (BSc) in nursing students enrolled in the 4-year program by self-administered questionnaire. I stored and analyzed the collected data using SPSS version 23.0 for mac.

Definitions

In this section, I provide the conceptual definitions of the study variables that includes nursing students, stress, anxiety, depression, campus connectedness, social support, and coping. I include a detailed overview of conceptual and operational definitions of predictor and outcome variables in Chapter 2.

Anxiety: A state of tension and apprehension that may occur due to the response to a perceived threat (Passer & Smith, 2009).

Campus connectedness: A type of social connectedness in the context of college environment (Lee et al., 2002). *Campus connectedness* refers to how students perceive themselves concerning their relationship with others (Jdaitawi, 2015).

Coping: The individual's efforts to reduce the distress associated with situations that may lead to perceived harm, loss, or threat (Carver & Scheier, 2005). *Coping* is a process whereby the individual makes cognitive and emotional efforts to deal with stressors (Folkman & Lazarus, 1980).

Depression: Characterized by sadness, hopelessness, and helpless feelings that the individual experiences (*Diagnostic and Statistical Manual of Mental Disorder*, 2013).

Nursing students: For the purpose of this study, *nursing students* refer to the students enrolled in colleges affiliated to Purbanchal University in Nepal for a-4-year BSc in nursing program. The criteria for enrollment includes successful completion of 12 years of school education.

Stress: A process that occurs between the person and the environment, in which the individuals use their ability to meet the demands posed by the existing situation (Lazarus & Folkman, 1984).

Social support: The individual's belief that care and assistance from others will be available if needed (Manju, 2017; Uchino, 2009).

Assumptions

The first assumption that I made in this study was that the nursing students would accurately report the symptoms of stress, anxiety, and depression that they experienced the week previous to the DASS-21 administration. My second assumption in this study was that the nursing students' desire to decrease stress, anxiety, and depression and increase campus connectedness.

Scope and Delimitations

In this study, I used a descriptive cross-sectional design to examine the relationship of campus connectedness, perceived social support, and coping with stress, anxiety, and depression among undergraduate nursing students in Nepal. The threat to internal validity may have occurred due to the selection of participants by using purposive sampling. However, the threat of internal validity was not a concern in this study because it is a correlational study and I did not aim to examine causality (Grove et al., 2013). This study included only one genre of undergraduate students (i.e., BSc nursing students); therefore, the findings may lack generalizability to the nursing students from other two undergraduate nursing programs namely proficiency certificate level (PCL) and bachelor of nursing science (BNS) students.

The other delimitation in this study included the choice of Lazarus and Folkman's (1984) theory of stress, coping, and adaptation over other nursing models. The Neuman systems model (Neuman, 1995) and the Roy's adaptation model (Roy, 2009) also address the concepts of stress and adaptation; however, most nurse researchers have used Lazarus and Folkman's theory of stress, coping, and adaptation as a theoretical basis in their studies due to its parsimonious elements (Roy, 2011). The Neuman systems model (1995) and the Roy adaptation model (Roy, 2009) also focus on physiological, developmental, and spiritual variables in their models; however, the scope of this study did not involve physiological reactions to stress. Finally, the findings from this study may help to determine the usefulness of the theory of stress, coping, and adaptation as it applied to nursing students in Nepal.

Limitations

A limitation of the study may be due to the nature of the self-reported information that cannot be verified. All instruments in this study were structured self-reported surveys. The students may have provided biased responses (Polit & Beck, 2008) when reporting their levels of stress, anxiety, and depression due to the stigma related to these conditions. I addressed the limitations related to response bias by assuring the students that the anonymity and confidentiality will be maintained pertaining their information. The other limitation is that the CCS for measuring campus connectedness has not been validated among nursing students. However, the tool has been used and validated among the large number of college students who belong to the disciplines of psychology, public health, and others in the universities in Australia, Hong Kong, and the United States. I

included only female nursing students. The reason for recruiting only female students was, that in Nepal, the criteria for enrollment does not allow male candidates to apply for nursing education. Therefore, the findings of the study may not be generalizable to the male nursing students outside Nepal.

Significance

My purpose in this study was to examine the relationship of campus connectedness, perceived social support, coping, with stress, anxiety, and depression among undergraduate nursing students in Nepal. In the study, I also provided the opportunity to measure the levels of stress, anxiety, and depression in nursing students. In case the students in the study report high levels of stress, anxiety, and depression, I plan to communicate the findings to the nursing faculty and administrative staff of the colleges where the data were collected. Early detection and management of stress, anxiety, and depression among nursing students may result in increased productivity, improved quality of life, and prevention of suicide (Ab Latif & Mat Nor, 2016; Manpreet & Maheshwari, 2015).

In this study, I also identified the perceived levels of campus connectedness and social support that are relatively newer concepts in nursing. The findings from this study may reveal the role of campus, family, friends, and significant others in the psychological well-being of the students. This may equip nursing faculty, administrators, and clinical instructors in identifying the academic, clinical, and personal stressors among students.

The potential implications for positive change through this study include filling a gap in the literature by providing data on the prevalence of stress, anxiety, and depression

among nursing students in Nepal. This study may be the first study in Nepal to examine the factors such as campus connectedness and perceived social support and its relationship with stress, anxiety, and depression. Stigma related to mental health problems including depression still exists in Nepal (Luitel et al., 2015), so communicating these findings to the nursing faculty, administrators, and clinical instructors may produce evidence that will act as a "collective voice" of the nursing students. The study may also indicate the need to establish the annual mental health screening program for nursing students for early detection and management of mental health issues such as stress, anxiety, and depression (Mahmoud, Staten, Hall, & Lennie, 2012). The study findings may also bring about positive social change by indicating a need for support services such as counseling in nursing colleges in Nepal, which is currently lacking in most colleges.

Summary

A minimal level of stress may be beneficial to the nursing students as a motivating factor in improving their academic and clinical performance (Ellawela & Foneska, 2011; Gibbon, 2010). However, the high levels of stress may cause anxiety and depression (Labrague, 2013). Furthermore, the high levels of stress, anxiety, and depression may have an adverse influence on students' physical health, psychological well-being, and academic performance (Deasy, Coughlan, Pironom Jourdan, & Mannix-McNamara, 2014; Tosevski et al., 2010). Previous literature among college students has shown that factors such as campus connectedness, social support, and coping play a significant role in protecting students from high levels of stress, anxiety, and depression

(Armstrong & Oomen-Early, 2009; Roohafza et al., 2014; Stebleton et al., 2014; van Berkel, 2009). Examining the role of campus connectedness, social and support, and coping with the levels of stress, anxiety, and depression among nursing students in Nepal will fill the gap in the literature.

To further fill the gap in the literature related to the study variables mentioned earlier in this chapter, I will provide an exhaustive literature review on the theoretical foundation and key variables in Chapter 2. I also provide a review and synthesis of the peer-reviewed articles related to the predictor and outcome variables that justify the need for conducting this study.

Chapter 2: Literature Review

Introduction

The prevalence of psychological problems such as stress, anxiety, and depression has been increasing globally among the general population (Bilgel & Bayram, 2014). Research reveals that the occurrence of stress, anxiety, and depression among university students is high (Abdel Wahed & Hassan, 2017; Bukhari & Khanam, 2015; Kessler & Bromet, 2013; Mistler, Reetz, Krylowicz, & Barr, 2012). In particular, nursing students report high levels of stress when compared with students in other educational programs (Alzayyat & Al-Gamal, 2016). The literature also identifies various factors for the high levels of stress and anxiety among nursing students. The main factors that may cause stress among students are classified into academic, clinical, and personal factors (Altiok & Ustun, 2013; Al-Zayyat & Al-Gamal, 2014; Blomberg, Bisholt, Kullen-Engstrom, & Ohlsson, 2014; Gibbon, 2010; Jimenez et al., 2010; Khater, Akhu-Zaheya, & Shaban, 2014; Labrague, 2013; Suresh, Mathews, & Coyne, 2013).

The other significant factors in promoting students' psychological well-being include campus connectedness, social support, and coping. The most researched area among these three factors is coping. Few studies examine the relationship between campus connectedness, and social support with the levels of stress, anxiety, and depression among nursing students. The findings from the empirical and theoretical research highlight the protective role of campus connectedness (Eckberg et al., 2017; Lee et al., 2002; Lee & Robbins, 1995), social support (Cohen, 1992; Lazarus & Folkman, 1984; Wang, Cai, Quan, & Peng, 2014; Yildirim, Karaca, Cangur, Acikgoz, & Akkus,

2017), and coping (Cohen & Wills, 1985; Lazarus & Folkman, 1984; Morimoto, Furuta, Kono, & Kabeya, 2017; Rahnama, Shahdadi, Bagheri, Moghadam, & Absalan, 2017) on the levels of stress, anxiety, and depression.

In this literature review, I examine the relationship between campus connectedness, social support, coping and stress, anxiety, and depression among nursing students. This chapter includes the search strategy, theoretical foundation based on Lazarus and Folkman's theory of stress, coping, and adaptation, and an extensive literature review on major concepts in the study. I discuss the definitions of major concepts and the prevalence and determinants of stress, anxiety, and depression among nursing students. I also explore the literature related to the relationships between campus connectedness, social support, coping with stress, anxiety, and depression.

Literature Search Strategy

Literature on the major concepts in this study such as stress, anxiety, depression, campus connectedness, social support, and coping among nursing students were acquired through several databases including CINAHL Plus with full text, MEDLINE with full text, Ovid Nursing Journals full text, Nursing & Allied Health Database, ProQuest, PsycINFO, PsycARTICLES, Education Resources Information Center (ERIC), and PubMed using Walden University library. I also used search engines such as Google and Google Scholar for obtaining additional literature. Nepal Health Research Council's (NHRC) digital library was accessed to review the literature specific to Nepal. The other resources used for reviewing literature included textbooks, national and international reports, and doctoral dissertations.

The search words and phrases included *stress*, *anxiety*, *depression, campus connectedness*, *social connectedness*, *belongingness*, *social support*, *coping*, *coping*, *stress and coping and nursing students*, *depression and nursing students*, *stress and anxiety and depression and nursing students*, *coping and nursing students*, *DASS-21*, *Lazarus & Folkman's theory*, and *psychological distress*. I filtered the literature filtered to peer-reviewed, full text articles, and publication dates between 2013 to 2018 with the exception made for the studies done in Nepal as there was scarce literature found on the related topic. I also reviewed older publications for theory and concept development, tool construction, and testing of tool validity and reliability.

Theoretical Foundation

Origin of Theory

Theories guide both research and practice in nursing (Walker & Avant, 2011). The theory used as a foundation for the current study is the theory of stress, coping, and adaptation developed by Lazarus and Folkman (1984). Professor Lazarus started working on psychological stress and coping in the 1950s (Lazarus, 1998). Lazarus' interest in psychological stress awakened during World War II as the military needed men who could encounter stress with resistance. Also, they wanted to train people to manage stress during war (Lazarus, 1993a). In their first experimental research on stress, Lazarus and Erickson discovered that stressful conditions produced varied responses in people (as cited in Lazarus, 1993a). They further reasoned that the difference in the responses occur due to the result of individual differences in motivational and cognitive variable (Lazarus, 1993a). In developing the theory of stress, coping, and adaptation, Lazarus and

colleagues conducted a series of experiments for defining appraisal, and coping (Lazarus, 1993a; Lazarus & Folkman, 1984).

Major Theoretical Propositions

The theory of stress, coping, and adaptation provides a framework to address how people cope with a stressful situation. The theory focuses on the psychological response of an individual to stress (Lazarus, 1993b). The major concepts of the theory are stress, person-environment relationship, appraisal, coping, and adaptation (Folkman & Lazarus, 1988; Lazarus & Folkman, 1984). The concept of *stress* defined by Lazarus and Folkman (1984) is a relationship between person and the environment that is appraised by the person as a situation that cannot be tackled with available resources. This inability to encounter the stressful situation may endanger person's well-being (Lazarus & Folkman, 1984). The focus is neither on person nor the environment, but on the relationship between the person and environment (Folkman, 1984). The person-environment relationship is comprised of personality, values, beliefs, commitments, social networks, social supports, sociocultural factors, and life events.

Folkman and Lazarus (1985) used the term *cognitive appraisal* in their theory that denotes to the processes in which people evaluate and react to any stressful situation. The two cognitive appraisals include primary and secondary appraisals. *Primary appraisal* is the judgment that the individuals make about the situation and its relevance to their well-being. (Lazarus & Folkman, 1986; Lazarus & Folkman, 1984). *Primary appraisal* refers to the extent to which the person evaluates the situation as stressful (Lazarus & Folkman, 1984). If the person perceives a situation as nonstressful, the need to use coping does not

occur (Groomes & Leahy, 2002). Primary appraisal of stress is one of three types: harm, threat, and challenge (Lazarus & Folkman, 1987). *Harm* can be defined as a psychological damage that has already occurred, threat as an anticipation that harm may occur in future, and challenge as a result from being confident that coping can overcome stress (Lazarus, 1966). *Secondary appraisal* refers to how the person responds to the stressful event (Lazarus & Folkman, 1986; Lazarus & Folkman, 1984). If the person perceives the situation as stressful, the secondary appraisal comes to work and involves coping (Groomes & Leahy, 2002). In secondary appraisal, the person evaluates the different available options of coping to prevent harm. These options may include accepting the situation, finding more details about the situation that have occurred, or avoiding self to react negatively to the situation (Folkman, Lazarus, Dunkel-Schetter, Delongis, & Gruen, 1986).

Coping occurs when demand is aroused by the appraised stress. Lazarus and Folkman (1998) define *coping* as a continuous process in which individuals learn to appraise the changing person-environment relationship (Lazarus & Folkman, 1998). The key features of coping include (a) coping is a process, (b) coping is contextual, and (c) coping has no priori assumptions (Folkman et al., 1986). As a process-oriented concept, coping brings change rather than stability in person-environment relationship. Coping as contextual means that person and the situation together shape coping efforts. Furthermore, coping has no prior assumptions as Lazarus and Folkman do not suggest what is effective or ineffective coping or how to succeed; rather, they focus on the efforts person takes to manage stress (Folkman et al., 1986; Lazarus & Folkman, 1986). This

coping process emphasizes the person's thoughts and actions when encountering stressful situations and how these changes when the encounter stops (Folkman et al., 1986).

The two types of coping, also identified as functions of coping, are problem-focused and emotion-focused coping (Lazarus & Folkman, 1984). In *problem-focused coping*, the person deals with the problem that is causing the stress and in *emotion-focused coping*, the person regulates emotion (Eaton, Davis, Hammond, Condon, & McGee, 2011; Mackay & Pakenham, 2012). The person using problem-focused coping acts upon changing or altering the troubled person-environment relationship causing stress. On the other hand, emotion-focused coping enables the person to change or modify the reaction to the stressful situation (Lazarus, 1993a). In the development of the coping tool, "The Ways of Coping," Folkman and Lazarus (1985) constructed the items for problem-focused and emotion-focused coping. The problem-focused coping includes confrontive coping, planful problem solving, seeking social support, and positive reappraisal. The examples of emotion-focused coping include distancing, accepting responsibility, and escape-avoidance. The independent item on the way a person copes with the stressful situation is self-control that does not meet the criteria for problem-focused and emotion-focused coping.

The other concept that the theorists explored within the framework of stress and coping is social support (Dunkel-Schetter, Folkman, & Lazarus, 1987). *Social support* is a coping resource that refers to the functions performed for the person by significant others such as family members, friends, and colleagues (Thoits, 1995; Zimet et al., 1988). The results from the study conducted to find out the correlates of social support indicated

that interaction between stress and social support can be significant in coping with stressful situations (Dunkel-Schetter et al., 1987). The work by Lazarus and Folkman has been adapted by many researchers interested in social support research (Cohen & Wills, 1985; Barrera, 1986).

The adaptation to the person- environment relationship can be either adaptive or maladaptive depending on the outcome (Lazarus, 1993b). Adaptive outcomes occur when the person encounters the stressful situation effectively. Maladaptive outcomes occur when an individual does not effectively acclimate to a stressful situation. Maladaptive outcomes can affect physical health, social well-being, psychological, or morale of the individuals (Lazarus, 1993b; McEwen & Wills, 2014). The assumption of the stress, coping, and adaptation theory indicates that individuals who experience repeated stressful situations in life may become vulnerable to using coping options. As a result, they may experience anxiety and depression (Folkman et al., 1986). The other assumption that emerges from the theory of stress, coping and adaptation is that coping, either effective or ineffective, depends on the person, the specific encounter, and outcome in terms of physical and psychological health or social functioning (Lazarus, 1993b).

Application of Theory in Literature

Many nursing researchers have used this theory as a theoretical framework for their study worldwide. This theory is also the basis of Roy's adaptation and Neuman's systems model (Brenner, Zimmerman, Bauermeister, & Caldwell, 2013; Lazarus & Folkman, 1984; McEwen & Wills, 2014; Thomsen, Rydahl-Hansen, & Wagner, 2010). The theory of stress, coping, and adaptation is not only limited for providing theoretical

framework for the research examining stress and coping among nursing students, but for various other groups of people facing stressful life situations. Mackay and Pakenham (2012) validated Lazarus and Folkman's theory of stress, coping, and adaptation among caregivers of mentally ill patients in Australia. The findings of the study supported the assumptions of the stress and coping model by identifying the risk factors from mental health caregiving (Mackay & Pakenham, 2012). A study among transgender individuals revealed that long-term use of avoidance coping, or emotion-focused coping may lead to stress, anxiety and depression which is congruent with the theory of stress, coping, and adaptation (Budge, Adelson, & Howard, 2013). Graungaard, Anderson, and Skov (2011) studied coping strategies used by parents caring for children with severe disabilities. The authors identified that the purpose of coping was not only to reduce stress in a particular situation, but also to find ways to sustain coping as a process that complements the work of Lazarus and Folkman. Thomsen et al. (2010) used Lazarus and Folkman's theory of coping to study coping and associated issues in cancer patients to confirm the assumption that a patient's appraisal of the stressful situation may be influenced by personal and environmental factors (Lazarus & Folkman, 1984).

There is evidence that researchers examining stress, coping, and related factors among nursing students have also used the theory of stress, coping, and adaptation as the theoretical framework. Goff (2011) and Hamaideh (2015) applied the theory of stress, coping, and adaptation for assessing college students' reactions to stressors and the impact of stressors on nursing academic performance. The appraisal of stressful situations not only affected nursing students' academic performance but it also improved

motivation, decision making, coping, self-confidence, and satisfaction among students (Goff, 2011). Similarly, Mahmoud et al. (2012) and Mahmoud, Staten, Lennie, and Hall, (2015) found that maladaptive coping among college students was a predictor of depression and anxiety. This finding is congruent with Lazarus and Folkman's theory that assumes that maladaptive coping may lead to psychological ill health (Lazarus & Folkman, 1984). Furthermore, Fornes-Vives, Garcia-Banda, Frias-Navarro, and Rosales-Viladrich (2016) recommended adding a new coping which they named as "relationship-focused" coping to the Lazarus and Folkman's theory, as the authors predicted social relationships to be predominant in nursing profession. The theory of stress, coping, and adaptation has been also validated in a clinical setting for examining perceived stress and coping among nursing students (Zhao, Lei, He, Gu, & Li, 2015).

Rationale for Theory Application

Although the theory of stress, coping and adaptation by Lazarus and Folkman has been used and validated worldwide in the studies measuring stress, stressors, and coping among nursing students, there are not many studies done among nursing students in Nepal. The theory of stress, coping, and adaptation was preferred over other theories such as Selye's general adaptation syndrome and Roy's adaptation model as these theories mainly focus on the physiological responses rather than psychological responses. Although Neuman's systems model focuses on physiologic and psychologic stress responses, the model is complex and has multiple concepts. Also**,** Roy's adaptation model and Neuman's systems model have been derived from the theory of stress, coping, and adaptation, which indicates the authenticity of the theory. The other reason for

selecting the theory of stress, coping, and adaptation is that the tool for measuring coping (Carver, 1997) among nursing students in the study has coping domains of emotional-focused and problem-focused coping congruent with the theory of stress, coping, and adaptation.

Literature Review Related to Key Concepts

Definitions

Stress. The word *stress* became part of the English language in the 14th century that meant "a physical hardship or trial" (Hayward, 2005, p. 2001). Historically, the stress originated from the French word *estrece* meaning narrowness and oppression, and from the Latin word *stringo or stringere* meaning, to draw tight (Hayward, 2005). In Oxford English dictionary, stress is referred to as a hardship, strain, adversity, affliction, and hard pressed. The synonyms of stress found in the literature include tension, pressure, strain, tightness, tautness, and distress (Moal, 2007; Steinberg & Ritzmann, 1990; Timmins, Corroon, Byrne, & Mooney, 2011). Hans Selye was the first man to use the term *stress* in physiological and biomedical research (Chrousos, Loriaux, & Gold, 1988; Koolhaas et al., 2011). *Stress* can be defined in the context of many different disciplines such as psychology, psychiatry, sociology, endocrinology (Steinberg & Ritzmann, 1990), biomedical, physiology (Levine, 2005; Selye, as cited in Koolhaas et al., 2011), engineering, dentistry, medicine (Hayward, 2005), information technology (Padma et al., 2015), physics (Keil, 2004; Rezini, Baki, & Rahmani, 2016), and nursing (Lazarus, 1998; Massee, 2000).

Selye defined stress as the nonspecific response of the body to any demand, good or bad, made upon it (Selye, 1976). He explained the physiological response of the body to the stressful events, referring good stress as *eustress,* and bad stress as *distress* (Selye, 1976). According to Cox (1978), when the emotional demands placed on an individual are greater than they can cope with, this imbalance gives rise to stress. Stress, in psychology, denotes the mind-body connection in which the self-appraised situational demands are greater than the resources available to face those demands (Lazarus, 1999). Stress may also refer to mental or physical states, minor irritants, life crises, verbal emphases, or problematic forces in engineering and dentistry (Hayward, 2005).

Stress in medicine is referred as a physical or psychological stimulus that can produce mental tension or physiological reaction that may lead to illness (The American Heritage Science Dictionary, n.d.). In nursing, stress has been identified as an important psychosocial factor in the educational process because it may influence academic performance and student well-being (Sawatzky, 1998). Likewise, the sociological definition of stress relates to work-related stress that could occur due to work overload and limited resources (Goodnite, 2014). Most recently, stress has been defined as the damaging emotional and physical responses that occur when the demands of life overwhelm the resources, needs or capabilities of an individual (Bennett & Shepherd, 2013; Yaman, 2015). Finally, stress refers to the physical, mental, and emotional strains that an individual experience during one's lifetime (Marzo et al., 2016). The findings from various researches reveal that long-term stress is associated with anxiety and

depression (Basu et al., 2016; Bergdahl & Bergdahl, 2002; Moffat, McConnachie, Ross, & Morrison, 2004; Peng, Xiao, Yang, Wu, & Miao, 2014; Stecker, 2004).

Anxiety. The word *anxiety* originated from a Latin word, *anxietas* that came from *anxius* and was first used in 1525. (Merriam-Webster, 2018). *Anxiety* refers to fear or nervousness about what might happen or a feeling of wanting to do something very much (Merriam-Webster, 2018). The American Psychological Association (APA, 2015) refers to anxiety as an emotion characterized by the feeling of tension, worried thoughts, and physical changes like increased blood pressure. Anxiety is a perceived threat to homeostasis in an individual (Bay & Algase, 1999). Gray (1995) defines *anxiety* as a state evoked by a response to threat and punishment or threat and non-reward or novelty where the reaction is to "stop, look, listen, and get ready for action" (p. 661). People with anxiety may avoid certain situations out of worry (APA, 2015). The medical definition of anxiety by Merriam-Webster (2018) points out that anxiety is an abnormal and overwhelming sense of apprehension and fear marked by doubt concerning the reality and nature of the threat, and by self-doubt about one's capacity to cope with it.

Furthermore, Lazarus and Folkman (984) described anxiety as a strange feeling worsened by a long period of stress and the presence of multiple stressors. This definition can clarify that stress contributes to anxiety leading to poor coping (Hughes, 2005). Anxiety can be classified into two types: state and trait anxiety (Moscaritolo, 2009). State anxiety is the individual's emotional response to a particular situation, while the trait anxiety is the individual's response to the state anxiety (Moscaritolo, 2009)**.**

Depression. The word *depression* came into existence in the late 14th century from Old French *depressio* (Harper, 2015). From early 15th century, the words such as dejection and depression of spirits became popular, whereas, depression as a clinical term in psychology became known for in 1905 (Harper, 2015). Merriam-Webster dictionary (2018) defines *depression* as a state of feeling sad; a serious medical condition in which a person feels very sad, hopeless, and unimportant and often is unable to live in a normal way; a period in which there is a little economic activity, and many people do not have jobs. A depressed person experiences loss of certain kind of activity with an increase in avoidance and escape activity (Ferster, 1973).

For the purpose of this study, the concept of depression is a psychological disorder in which people may lack pleasure in daily activities, significant weight loss or gain, insomnia or excessive sleeping, lack of energy, inability to concentrate, feeling of worthlessness or guilt and thought of death or suicide (APA, 2015; Marzo et al., 2016). According to the US Department of Health and Human Services (2000) depression and stress can be highly associated with each other, consequently, it may lead to suicidal ideation and attempts.

Campus Connectedness. The word connectedness has been used interchangeably with words such as, a sense of belongingness, engagement, bonding, and social attachment (Agu, Omenyi, & Odimegwu, 2010; Grobecker, 2016; Hagerty, Lynch-Saver, Patusky, & Bouwsema, 1993; Townsend & McWhirter, 2005; Walton & Cohen, 2011; Whitlock, Wyman, & Moore, 2014). The Maslow's Hierarchy of Needs emphasizes on the need for belongingness as a fundamental need among human beings (Maslow, 1970).

Therefore, the need for connectedness among human beings cannot be denied (Lee & Robbins, 2000). Hagerty et al. (1993) defined *connectedness* as the active involvement of one individual to another individual, group, or environment that promotes a sense of comfort and well-being and that also minimizes anxiety. *Connectedness* can also be referred as a feeling of relatedness to self and others (Lee & Robbins, 1995).

Barber and Schluterman (2008) and Townsend and McWhirter (2005) summarized two domains of connectedness: subjective domain and structural domain. In subjective domain, the individual feels a sense of interpersonal closeness with other individuals. The feelings that the individual experiences in the subjective domain include caring, sense of belongingness, trust, respect, and satisfaction with the environment (Whitlock et al., 2014). The structural domain focuses on networking, strengthening social ties, and sharing of resources with the individuals and organization (Whitlock et al., 2014).

Although campus connectedness is a newer concept in the literature, it has been derived from the concept of social connectedness (Lee, Keough, & Sexton, 2002; Lee & Robbins, 1995). Lee and Robbins (1995) derived the word social connectedness from Kohut's (1984) self-psychology theory. Social connectedness is the interdependency of self and others in a social environment (Chodorow, as cited in Lee, Draper, & Lee, 2001). Similarly, Hawkley and Cacioppo (2010) defined social connectedness as an interpersonal closeness and belongingness that individuals perceive in their social environment that may result in improved mental health and well-being. *Campus connectedness* is a kind of social connectedness that makes the individuals or students

feel that they belong to the social environment (Lee et al., 2002; Lee & Robbins, 1995). The campus is a social environment in which the students meet their learning objectives. The social environment involves students, teachers, administrators, and other staff. Campus connectedness determines the students' perception of their belonging to the members of the campus (Agu et al., 2010).

The individuals with high connectedness may feel close to others, perceive others as friends, and feel enthusiastic about participating in social group activities (Lee et al., 2001). On the contrary, lack of connectedness may cause stress, social anxiety and depression among individuals (Armstrong & Oomen-Early, 2009; Baumeister & Leary, 1995; Hagerty & William, 1999; Lee & Robbins, 1998; Lee et al., 2002). The research in the field of connectedness has also revealed that the unmet need of connectedness may have a negative impact on individual's health and well-being (Moen, 1998; Jdaitawi, 2015; Rude & Burnham, 1995; Townsend & McWhirter, 2005). Campus connectedness is essential for college students (Alam, Rafique, & Anjum, 2016) as it is positively associated with happiness, hope, and self-esteem (Khodabakhsh & Besharat, 2011).

Lee and Robbins (1995) differentiated between the concept of social or campus connectedness and social support. Perceived social support emphasizes on the support from the environmental sources including other individuals whereas, social connectedness is a more persistent and global ability to connect with the social world (Lee & Robbins, 1995). The perceived social support indicates lack of appropriate social environment, whereas, social connectedness is more concerned with the deficiencies within the self (Lee & Robbins, 1995).

Social Support. Over the years, researchers and theorists have defined *social support* in many ways. Social support may be understood differently in different societies (Tonsing, Zimet, & Tse, 2012). In general, social support has been viewed as a coping resource (Thoits, 1986, 2011; Zimet et al., 1988). As early as in 1976, Cobb explained the concept of social support under three categories. The first category relates to the individual's belief that he is cared for and loved. This type of perceived notion can be called emotional support. The second category involves individual's belief that he is esteemed and valued which can be called esteem support. The third category relates to the individual's belief that he belongs to a network of communications (Cobb, 1976). These beliefs on social support promote coping and adaptation during stressful experiences in the life of an individual (Cobb, 1976).

Lin (1986) defined *social support* as perceived or actual actions extended by the community and the social networks. Social support can also be explained as the care from others that the individual may feel, notice, or accept (He, Guan, Kong, Cao, & Peng, 2014; Wang, 2014). The care and love may be extended by the family members, friends, teachers, or any other social group to which the individual is affiliated (Md. Yasin, & Dzulkifli, 2010). In a more recent literature, Heerde and Hemphill (2018) defines *social support* as assistance that the individuals in a social network render to each other for the management of stress. The previous research on social support provides evidence that social support may be helpful directly or as a buffering system when the individual encounters stressful situations (Baek, Tanenbaum, & Gonzalez, 2014; Cohen & McKay, 1984; Giesbrecht, Poole, Letourneau, Campbell, & Kaplan, 2013; Steese et al., 2006).

The concept of social support has two dimensions; structural and functional (Nausheen, Gidron, Peveler, & Moss-Morris, 2009). The structural dimension of social support includes the size, proximity, accessibility, and frequency of social networking (Goebert & Loue, 2009). Whereas, the functional dimension includes the perceived social support (Ekback, Benzein, Lindberg, & Arestedt, 2013) which is the focus of interest in the current study. Perceived social support refers to the individual's belief that support is available if needed (Uchino, 2009). The other benefit of perceived social support is that it determines the buffering effect on stressful life situations (Baek et al., 2014; Giesbrecht et al., 2013).

Coping. *Coping* refers to the person's capacity to deal successfully with a difficult situation (Cambridge University Press, 2018; Oxford University Press, 2018). In early research, coping was conceptualized as an unconscious effort the individual made in the form of defense mechanism (Freud, as cited in Endler & Parker, 1990). The continuous work in the field of coping conceptualized coping as a conscious response to the external stressful event (Folkman, 1984; Folkman & Lazarus, 1980; McCrae, 1984). The concept of coping implies dealing with stressful or difficult situations (Keil, 2004). The concept of coping has psychological characteristics that include either modification of external factors or internal adaptation (Folkman & Lazarus, 1980) or to reduce stress (Keil, 2004). While coping with the stressful situation, the individual tries to make an effort to gain mastery, tolerate, or minimize external and internal demands and conflicts using cognitive and behavioral functions (Folkman & Lazarus, 1980). Muller and Spitz

(2003) defined coping as "cognitive and behavioral efforts to master, reduce, or tolerate the internal and external demands that are created by the stressful transaction" (p. 507).

Lazarus and Folkman (1984) identified two approaches to coping. The first is a problem-focused approach, in which the problem is evaluated, and action taken to manage the situation. The second is an emotion-focused approach which focuses on the temporary solution. Carver (1997) proposed fourteen dimensions of coping based on problem-focused and emotion-focused coping. The dimensions of coping include: (a) active coping, (b) planning, (c) positive reframing, (d) acceptance, (e) humor, (f) religion, (g) using emotional support, (h) using instrumental support, (i) self-distraction, (j) denial, (k) venting, (l) substance use, (m) behavior disengagement, and (n) self-blame. Active coping is similar to Lazarus and Folkman's (1984) problem-focused coping. In active coping, the individual tries to take steps to remove or find a way around the stressors (Carver, Scheier, & Weintraub, 1989). The other problem-focused coping is planning by which the individual thinks about various action strategies to cope with the stressors (Carver et al., 1989).

The individual using *positive reframing* focuses working on stress-induced emotions rather than using strategies to minimize stressors causing the stress (Carver et al., 1989). *Venting* means ventilating one's feelings caused by the stress. The dimension of *religion* may vary from person to person. Religion may act as emotional support to cope with the stressors (Carver et al., 1989). The dimensions of *emotional support* and *instrumental support* are the examples of social support. However, seeking instrumental support may include seeking advice from others that can be considered problem-focused

coping. Seeking emotional support is more for seeking sympathy or understanding of others that may be a type of emotion-focused coping (Carver et al., 1989).

Denial denotes coping in which the individual refuses to believe that stressors exist even while facing the stressful situation. The individual may facilitate coping by minimizing stress in denial (Cohen & Lazarus, 1973; Wilson, 1981). Denial may also have a negative impact on individual's coping due to the failure of addressing the stressors causing stress (Suls & Fletcher, 1985). The coping dimension *acceptance* is another useful style for coping. Acceptance may occur both in primary appraisal and secondary appraisal. In primary appraisal, the individual facing stress accepts the presence of stress. Whereas, in secondary appraisal, the individual accepts the absence of suitable coping (Carver et al., 1989).

The strategies of *behavioral disengagement* and *substance use* are the examples of dysfunctional coping. In behavioral disengagement, the individual's effort in coping with the stressor reduces, or individual may give up the attempt to reduce stressor that is causing stress (Carver et al., 1989). The coping strategy of *self-distraction* involves the mind of an individual from finding out the ways to escape from the stressors by engaging in activities such as watching television, playing games, shopping and so on (Carver et al., 1989). Carver (1997) added *self-blame* to the list of coping dimensions. *Self-blame* is an emotion-focused coping that may lead to maladjustment or maladaptive behavior. The coping the individuals use during the stressful situation determines their psychological adjustment and well-being (Monzani et al., 2015).

Stress, Anxiety, and Depression Among Nursing Students

Prevalence. Most undergraduate students are adolescents who may go through a transition from the protected life of a home environment to an independent life of a college. This transition may bring many challenges in the life of the adolescent (Ahmed & Julius, 2015; Beiter et al., 2015; Lovell, Nash, Sharman, & Lane, 2015). The failure to adapt to this transition may cause stress, anxiety, and depression among students (Ahmed & Julius, 2015). A wide range of research among nursing students has been conducted across the globe that reveals that college or university students score high levels of stress, anxiety, and depression. The studies focusing on undergraduate nursing students also indicate a high prevalence of stress, anxiety, and depression (Bartlett et al., 2016; Pryjmachuk & Richards, 2008; Reeve, Shumaker, Yearwood, Crowell, & Riley, 2013). A high prevalence of stress, anxiety, and depression among nursing students may be due to the dual demands of academic as well as clinical requirements (Rafati, Nouhi, Sabzehvari, & Dehghan-Nayyeri, 2017).

Researchers who have investigated the prevalence of stress, anxiety and depression among nursing students have used well validated and reliable tools. The most frequently used tools to identify the prevalence of stress, anxiety and depression in research include Depression Anxiety Stress Scale (DASS- 21) (Lovibond & Lovibond, 1995). This scale has three subscales that have been widely used among university students including nursing students. The other globally used tool is General Health Questionnaire (GHQ-12) (Goldberg & William, 1988). GHQ includes items related to psychological distress, anxiety, and depression. The tools for assessing stress include

Perceived Stress Scale (PSS-10) (Cohen, Kamarck, & Mermelstein, 1983), PSS- 29 (Sheu, Lin, & Hwang, 2002), Stressors in Student Nursing Scale (SINS) (Deary, Watson, & Hogson, 2003), and Student-Life Stress Inventory (SSI) (Gadzella, Fullword, & Ginther, as cited in Hamaideh, 2015).

Although DASS-21 is the most widely used scale to measure anxiety, the literature shows that the State-Trait Anxiety Inventory (Spielberger, 1983) has also been used in studies related to anxiety. The tools for measuring depression include a 20- item Center for Epidemiological Study-Depression Scale (CES-20) (Radloff, as cited in Ratanasiripong et al., 2015), 10- item CES (Radloff, 1991). CES was developed mainly for evaluating depression among adolescents and young individuals (Zhang, Chernaik, & Hallet, 2017). Beck's Depression Inventory (BDI) (Beck, Steer, & Brown, 1996) and Zung Self-Rating Depression Scale (SDS) (Zung, 1965) have been used over the years among all age groups including adolescents, patients with chronic illness, and have been translated and validated in different languages.

Using the measurement scales, the researchers in the previous research have indicated a high prevalence of stress, anxiety, and depression. The results from the most studies in a literature review done by Labrague et al. (2017) have shown moderate levels of stress among students. The countries such as United States, Australia, Hong Kong, and Spain have a similar pattern of prevalence of stress ranging from 20% to 26.5%, a high prevalence of anxiety ranging between 24.7% and 39.9%, whereas the students experiencing depressive symptoms were found to be in the range of 12.9% to 24.3% (Beiter et al., 2015; Cheung et al., 2016; Eckberg et al., 2017; Pidgeon et al., 2014). In a

study done in Australia, the levels of depression, anxiety, and stress were found to be higher among students than that in a general population (Lovell et al., 2015).

The literature reveals that the prevalence of stress, anxiety, and depression have been higher in countries such as India, Sri Lanka, Republic of China, Saudi Arabia, and Brazil than in developed countries. The prevalence of stress ranging from as low as 10.91% to high as 80.5%, anxiety 50 to 56.59%, depression 23.8% to 69.2% indicates the severity of the symptoms related to these mental health problems (Alfaris et al., 2016; Basu et al., 2016; Chatterjee et al., 2014; Lei et al., 2016; Patil et al., 2016; Rathnayake & Ekanayaka, 2016; Singh & Kohli, 2015; Xu et al., 2014). There is a lack of published studies related to stress, anxiety, and depression in Nepal, particularly among nursing students. In recent years, one study was conducted to examine the prevalence of depression among nursing students using BDI (Risal et al., 2016). The results of the depression inventory showed that 40% ($N = 212$) of students reported depressive symptoms categorized by mild level (27%), moderate level (9%), and severe level (1.4%) (Risal et al., 2016). Similarly, Sigdel and Pokharel (2015) reported that 69.2% nursing students ($N = 120$) experienced depression. Among them, 40% students reported mild depression, 11.7% reported moderate depression, and 17% reported severe depression (Sigdel & Pokharel, 2015). In another study in Nepal, 77.5% ($N = 169$) nursing students reported moderate stress level on modified PSS. (Shrestha & Lama, 2014).

Ratanasiripong et al. (2015) argued that due to the limited resources for counseling in low or middle socio-economic countries, students may experience high levels of stress, anxiety, and depression. Previous studies have revealed many other

factors that may be responsible for high prevalence of stress, anxiety and depression among nursing students.

Determinants of SAD. In the previous literature on stress, anxiety, and depression, the researchers have identified common themes and determinants of stress, anxiety, and depression using both qualitative and quantitative approach. The literature also revealed that most factors are similar among nursing students around the globe. This similarity could be due to the nature of the nursing profession. The determinants have also been described as risk factors, correlates, and stressors in the literature. I have grouped the determinants have been grouped according to their nature in the following sections**.**

***Academic determinants*.** The academic factors affecting the life of nursing students may include exams (Ab Latif & Mat Nor, 2016; Clark, Nguyen, & Barbosa-Leiker, 2014; Deasy et al., 2014; Eswi, Radi, & Youssri, 2013), assignments (Alzayyat & Al-Gamal, 2014; Deasy et al., 2014; Labrague, 2013; Zhao et al., 2015), and demanding workload (Ab Latif & Mat Nor, 2016; Al-Zayyat & Al-Gamal, 2014; Clark et al., 2014; Eswi et al., 2013; Labrague, 2013; Labrague et al., 2017; Zhao, et al., 2015). The other factors involve pressure to succeed, fear of failure, and grade competition among students (Beiter et al., 2015; Cheung et al., 2016; Clark et al., 2014; Eswi et al., 2013; Labrague, 2013; Wolf, Stidham, & Ross, 2015). Labrague (2013) also identified that Filipino students felt pressure and were stressed when the teachers make a comparison from other's performance.

Clinical practice. The unique feature that differentiates nursing students from the other university students is the requirement for the clinical placement early in their program. The adolescent student who probably have never been exposed to the clinical environment start taking care of patients in the real clinical setting. This sudden transition may increase the levels of stress among students which may cause further anxiety and depression. The anxiety may relate to the factors such as practice placement (Deasy et al., 2014) and insufficiency of clinical knowledge and competence particularly found among first-year students (Ab Latif & Mat Nor, 2016; Al-Zayyat & Al-Gamal, 2014; Chernomas & Shapiro, 2013; Cheung et al., 2016; Doulatabad, Mohamadhosaini, Shirazi, & Mohebbi, 2015; Hirsch, Barlem, Tomaschewski-Barlem, Lunardi, & de Oliveira, 2015; Labrague, 2013; Reeve et al., 2013; Zhao et al., 2015). Doulatabad et al. (2015) conducted a study among nursing students in Iran in which students reported various clinical factors causing stress such as inconsistency between clinical and theoretical learning, anxiety of making a mistake and its consequences, lack of skills for using the medical equipment in the wards, and fear of causing harm to the patients.

A qualitative study conducted among nursing students in Iran (Rafati et al., 2017) revealed many similar factors related to stress among nursing students. The students reported stressors as having a sense of inadequacy, being ignored by doctors and other nursing staff, and being looked upon as a servant to them. The other factors included ineffective communication in the clinical area, prevailing sadness due to the death of the patient, being exposed to the pain and suffering of the patients, and unclear and excessive expectations from clinical staff (Rafati et al., 2017). Doulatabad et al. (2015) also

reported that fear of being affected by infections and communicable diseases while caring for infectious patients also raised the level of stress and anxiety among students.

Faculty. The factors related to faculty that may cause stress, anxiety, and depression among students include faculty incivility (Clark, 2008; Clark et al., 2014). Faculty incivility involves making demeaning remarks to the students (Clark, 2008; Mahat, 1996), being rigid and inflexible, being biased to the students and showing favoritism, and using ineffective teaching methods and outdated teaching material (Clark, 2008). In a study conducted by Doulatabad et al. (2015), nursing students reported faculty related stressors such as faculty blaming students in the presence of others, inadequate supervision by the faculty during clinical hours, inadequate faculty support when problems occur on the wards, unjust evaluation, and stressfulness of the faculty members.

Relationships. Previous studies have revealed that relationships play a significant role in the mental health of the students. Poor relationships with family, peers, and faculty may increase the levels of stress, anxiety, and depression among students. Baccalaureate nursing students reported problematic relationships as one of the predictors of stress in a qualitative study conducted in four countries including Japan, Taiwan, Thailand, and the United States (Wolf et al., 2015). Similarly, Beiter et al. (2015) and Doulatabad et al. (2015) indicated relationships with friends and faculty as a significant predictor of stress, anxiety, and depression among nursing students. A study done in India also identified the unhealthy relationship with peers as a predictor of stress (Chatterjee et al., 2014). Family plays a significant role in the life of the individual. The family support may help the student to cope with the stressful life events. Thus, relationship crisis with

family and, disharmony between the family members may increase the levels of stress and anxiety (Chatterjee et al., 2014; Cheung et al., 2016). Eswi et al. (2013) identified conflicts with friends, spouse, family, and faculty as common stressors among nursing students in Saudi Arabia.

***Personal factors*.** Among personal factors, financial concern is the most commonly reported stressor among nursing students (AlFaris et al., 2016; Beiter et al., 2015; Cheung et al., 2016; Clark et al., 2014; Deasy et al., 2014; Graham, Lindo, Bryan, & Weaver, 2016; Suen, Lim, Wang, & Kowitlawakul, 2016). Multiple research findings have also revealed life style factors such as lack of sleep, failure to balance time, work, school, and family, inability to find time to relax, engage in leisure activities, pursue hobbies, and poor eating habits as leading factors for stress and anxiety among nursing students. (Beiter, et al., 2015; Cheung et al., 2016; Clark et al., 2014; Deasy et al., 2014; Wolf et al., 2015). Deasy et al. (2014) identified stressors such as being away from home, sharing accommodation with others, making new friends as more prevalent among first-year nursing students. In a study done by Beiter et al. (2015), students living off-campus reported a higher level of stress, anxiety, and depression than those living on-campus which can be related to feelings of insecurity of off-campus students and loss of time from traveling in and out of campus.

***Future uncertainties*.** Future uncertainties have been reported by senior students as they come closer to the finish line. These factors include insecurity over future placement and finding a job (Chatterjee et al., 2014; Suen et al., 2016), post-graduation

plans (Beiter et al., 2015), studying for NCLEX exams (Clark et al., 2014), and decisions related to their future career (Eswi et al., 2013).

***Stressors among Nepalese students*.** Based on previous research among nursing students in Nepal, the common clinical stressors include (a) theory-practice gap, (b) unfamiliar health care settings, (c) inadequate time for preparation and submission of assignments, (d) lack of equipment to carry-out nursing procedures, (e) lack of supervision and feedback from the instructors, and (f) faulty interpersonal relationships with faculty, patients' visitors and family members (Mahat, 1996; Shrestha, 2013; Shrestha & Lama, 2014). In the first study on stress and coping among nursing students in Nepal, Mahat (1996) noted that demeaning experience that included making patients' beds and receiving negative comments about nurses or nursing profession from others caused stress among nursing students. Students in this study felt that making beds should be done by cleaning staff and not by nurses as it hampers nurses' self-image (Mahat, 1996). The nursing students in Nepal reported academic stressors as an inability to balance study and leisure time, frequent examinations, length of class hours, and lack of interest in a subject (Shrestha, 2013; Shrestha & Lama, 2014). In their study, Shrestha and Lama (2014) reported that inadequate deliberation at the start of the program on how the students can meet the objectives of the curriculum caused stress and anxiety among students. Likewise, research also revealed that students reported that personal-environment stressors such as parents' high expectations, poor health status of self and a family member, change in eating and sleeping pattern, and lack of recreational activities were the reasons for their stress (Shrestha, 2013; Shrestha & Lama, 2014).

In a more recent study on stress and stressors among nursing and medical students in one of the medical universities in Nepal, nursing students experienced a higher prevalence of stressors than the medical students (Mandal, Lama, & Parajuli, 2016). The stressors that were more prevent among students include difficulty in understanding classes, frequent exams, insensitive and inconsiderate teachers and peer, relationship problems, financial problems, family problems and homesickness (Mandal et al., 2016).

Campus connectedness and SAD. As mentioned earlier in this chapter, campus connectedness is a kind of social connectedness that makes the students feel that they belong to the social environment (Lee et al., 2002; Lee & Robbins, 1995). It has also been referred as social connectedness and sense of belonging in the literature (Cheung et al., 2016). The concept of campus connectedness being new, has not been studied extensively. Although most research on campus connectedness has been done in the United States, a few studies have also been conducted in Hong Kong, Turkey, Australia, Saudi Arabia, Nigeria, and Japan. Campus connectedness may work as a motivating factor for the students to perform well academically and socially (Dunbar & Carter, 2017). Nursing students need to have a high campus connectedness within the classroom and clinical environment so that they can approach faculty members and counselor at the time when they need to express their worries and anxieties (Dunbar & Carter, 2017; Samuolis et al., 2017).

A series of studies conducted by Lee and his associates suggested a relationship between campus connectedness and psychological distress including anxiety and

depression (Lee, Dean, & Jung, 2008; Lee, Draper, & Lee, 2001; Lee, Keough, & Sexton, 2002; Lee & Robbins, 1998). In a descriptive correlational study among baccalaureate nursing students (N = 1,296) in the United States, Grobecker (2016) examined the relationship between sense of belonging and perceived stress in the clinical setting. The findings of the study indicated a low inverse relationship between a sense of belonging and perceived stress. Bales et al. (2015) argued that there may be cross-cultural differences that may influence the relationship between campus connectedness and psychological distress. However, the findings of their study did not support the research hypothesis about cross-cultural differences among university students from three different countries, but revealed a positive relationship between connectedness and psychological well-being which they defined as lower levels of stress, anxiety, and depression. The moderating effect of campus connectedness may also play a buffer role against negative effects of stress on life satisfaction (Civitci, 2015). In a study done among Turkish undergraduate students, it was found that students with high campus connectedness had low levels of perceived stress that suggested better life satisfaction (Civitci, 2015).

Similarly, a hierarchical regression revealed that a higher-level of campus connectedness significantly predicted lower levels of anxiety symptoms, while there was no significant relationship between a high level of campus connectedness and depression (Eckberg et al., 2017). The findings on the relationship of campus connectedness on depression vary in different studies. Armstrong and Oomen-Early (2009) and Pidgeon et al. (2014) in their studies found an inverse relationship between depression and campus

or social connectedness. This finding indicates that the increase in the level of campus connectedness decreases the levels of depression. Pidgeon et al. (2014) also suggested campus connectedness has the buffering effect on the relationship between stress and depression. Furthermore, Stebleton et al. (2014) created strong evidence on the relationship between campus connectedness and symptoms of stress and depression in their large-scale survey (N = 1,45,150) conducted among first-generation university students. In their study, students with a high sense of campus connectedness experienced fewer symptoms of stress and depression. The findings of the research reviewed in this section indicate campus connectedness as a predictor of stress, anxiety, and depression.

Social support and SAD. Social support, unlike campus connectedness, has been researched extensively among different subgroups such as students, patients with long-term illness, individuals with HIV, chronic mentally ill patients and so on. The literature highlights the relationship between social support and psychological distress including stress, anxiety, and depression. Social support has been considered a protective factor during the development of adolescents (Rueger, Malecki, Pyun, Aycock, & Coyle, 2016). A wide range of old and new research indicates that social support has a significant and negative association with depression (Auerbach, Bigda-Peyton, Eberhart, Webb, & Ho, 2011; Paykel, 1994; Ratanasiripong, 2012; Roohafza et al., 2014; Williams & Galliher, 2006; Xu et al., 2014). Social support was also found inversely related to anxiety among university students (Mahmoud et al., 2015). Social support theory (Cohen, 2004) also supports the notion that there is a direct and inverse relationship between social support and stress**.**

Social support has a moderating effect on the relationship between stress and depression (Wang et al., 2014). In a study amongst Chinese students, a hierarchical regression model indicated the moderating effect of social support and depression. The same study also revealed a significant correlation between depression and stress. Ramezankhani et al. (2013) conducted a study among 390 medical science students at a University in Iran to examine the relationship between perceived social support, depression, and perceived stress among students. The findings of Pearson's correlation test indicated a significant negative correlation between perceived stress and perceived social support. Likewise, authors also pointed out a significant relationship between stress and depression and between depression and perceived social support.

Zimet et al. (1988) developed a tool to assess perceived social support called the Multidimensional Scale of Perceived Social Support (MSPSS. The three sources of social support include family, friends, and significant others (Zimet et al., 1988). Family support is the most significant support in the life of an adolescent (Horgan et al., 2016). Regarding the source of social support, the authors did a study among undergraduate nursing and midwifery students in Ireland that revealed that there was a strong significance between the depressive symptoms and students' perceived relationship with their fathers. Nursing students who reported the poor relationship with their father were more likely to report depressive symptoms on Centre for Epidemiological Studies Depression Scale (CES-D) (Horgan et al., 2016). Wolf et al. (2015) also found that social support from family and friends was negatively associated with stress and depression among nursing students in the United States.

Individuals perceiving high social support may cope well with their stress which can further protect them from feeling depressive symptoms (Yildirim et al., 2017). A study among Turkish nursing students ($N = 517$) revealed that nursing students' stress coping levels were affected by their perceived social support which the authors measured using MSPSS (Zimet et al., 1988). Social support works as a predictor of anxiety and depression, while, stress is negatively associated with perceived social support (Bukhari & Afzal, 2017). In contrast, less social support may act as a risk factor for depression among adolescents (Rueger et al., 2016). Furthermore, social support serves as a buffer against life stressors and improves individuals' psychological well-being (Cohen & Wills, 1985; Roohafza et al., 2016).

Coping and SAD. Coping helps individuals to minimize or tolerate stress (Gustems-Carnicer & Calderon, 2013). Thus, coping promotes mental health and prevents psychological distress including stress, anxiety, and depression by creating a stress-buffer effect (Morimoto et al., 2017; Rahnama et al., 2017). The extensive literature on coping suggests that the most commonly used tools to measure coping among nursing students include (a) Brief Cope Inventory (BCI) (Carver, 1997), (b) Coping Behavior Inventory (CBI) by Sheu, Lin, & Hwang, 2002), and (c) Ways of Coping (WOC) Questionnaire (Folkman & Lazarus, 1988).

A similar pattern for using coping strategies among nursing students can be observed across countries in studies where researchers have used Brief Coping Inventory (Carver, 1997). The most common coping strategies that the nursing students use include acceptance, planning, and self-distraction (Tada, 2017; Yamashita et al., 2012; Yehia,

Jacoub, & Eser, 2016). The other dominant strategies found in literature includes emotional coping (Fornes-Vives et al., 2016), using instrumental support (Yamashita et al., 2012), and religion (Yehia et al., 2016). The least used coping strategies nursing students reported are substance use, denial, humor, and avoidance (Fornes-Vives et al., 2016; Tada, 2017; Yamashita et al., 2012; Yehia et al., 2016).

The type of coping strategy determines the relationship between coping and psychological distress such as stress, anxiety, and depression. More frequent use of maladaptive or passive coping strategies such as avoidance, self-blaming, denial (Mahmoud et al., 2015), and substance use predicts a higher level of stress, anxiety, and depression (Mahmoud et al., 2012). In a study among Japanese students, stress was found to be associated with coping strategies such as self-blaming, self-distraction, religion, instrumental support, and behavior disengagement (Tada, 2017).

Several studies have also shown the negative and positive correlation between coping strategies and stress, anxiety, and depression using Pearson's correlation coefficient test. In studies done among Jordanian, Iranian, Japanese, and American nursing students authors reported a positive correlation between perceived stress and coping strategies such as venting, self-distraction, self- blame, humor, and denial (Cherkil, Gardens, & Soman, 2013; Tada, 2017; Yamashita, et al., 2012; Yehia et al., 2016). Coping strategies that have shown a negative correlation with stress, anxiety, and depression include active coping, reframing, humor, and problem-solving (Fornes-Vives et al., 2016; Roohafza et al., 2014; Tada, 2017). Humor is one strategy that has found to have both positive and negative correlation with stress which may be due to the cultural

differences. It has also been maintained that nursing students learn to use adaptive strategies towards the end of their program. This can be evident in a longitudinal study in which authors examined the coping among students during their first year and third year academic session and found that nursing students used more effective coping strategies such as problem-focused strategies at the end of their program which also lowered their stress levels in compare to the stress levels in the first year (Fornes-Vives et al., 2016).

CBI is another widely used tool for measuring coping. The dominant coping strategies measured by CBI includes transference, staying optimistic, and problem-solving (Zhao et al., 2015). Using coping strategies were reported in a study among nursing students in Saudi Arabia, in which the authors reported a significant positive correlation between the strategies students used in their clinical practice such as avoidance, problem-solving, transference, and staying optimistic and levels of stress (Hamaideh, Al-Omari, & Al-Modallal, 2017). A similar group of students was found not to use the strategy of avoidance which is a maladaptive coping strategy (Zhao et al., 2015). Furthermore, a hierarchical regression analysis showed that higher previewed stress in clinical practice was associated with avoidance coping, while higher stress from taking care of patients was associated with transference coping such as watching movies, T.V., taking a shower, and physical exercise (Zhao et al., 2015). Another study among Jordanian nursing students confirms the relationship between coping strategies and stress (Alzayyal & Al-Gamal, 2016). Based on Munro's (2005) guidelines, Alzayyat and Al-Gamal reported a significant positive low correlation of avoidance strategy with perceived stress. Bales et al. (2015) also found that use of avoidance coping predicted

higher scores on stress, anxiety, and depression. In contrast, the use of planning and problem-solving approach was found to lower the level of perceived stress (Hirsch et al., 2015).

Coping also serves as a protective role for anxiety and depression (Roohafza et al., 2014). In a study done among Iranians students, the authors observed the negative association between active coping with depression and anxiety, whereas, a positive association was found between passive coping and depression and anxiety (Roohafza et al., 2014). Active coping and positive re-interpretation and growth were also found to be the protective factors for depression and anxiety (Roohafza et al., 2014). Coping with stress mediates the physical and psychological health of individuals. Thus, the nursing student with ineffective coping strategies may develop mental health problems including anxiety and depression (Yildirim et al., 2017). On the other hand, coping mitigates the adverse effects of stress on the physical and psychological health (Klainin-Yobas et al., 2014). This finding supports Lazarus and Folkman's (1984) stress, coping and adaptation theory. Overall, the findings from the various studies reveal a significant relationship between stress, anxiety, depression, and coping (Bales et al., 2015; Hirsch et al., 2015; Klainin-Yobas et al., 2014).

Summary and Conclusion

The literature review in this study highlighted the prevalence of stress, anxiety, and depression as high among nursing students around the world. Most studies related to stress, anxiety, and depression and their related factors have been conducted and published in the West. Other places of research include China, Jordan, Iran, Thailand,

Brazil, Saudi Arabia, Turkey, Spain, Japan, and India. The impact of psychological problems such as stress, anxiety, and depression may include poor academic performance resulting in poor grades, social isolation, and absenteeism (Collins & Mowbray, 2005). It may also affect students' sleep pattern, poor self-care, and disengagement from hobbies and interests (Al-Dabal, Koura, Rasheed, Al-Sowielem, & Makki, 2010). Finally, the students may drop-out from the course voluntarily or may be asked to leave due to their poor physical and mental well-being (Emadpoor, Lavasani, & Shahcheraghi, 2015).

High levels of perceived social support (Alimoradi, et al., 2014; Emadpoor et al., 2015; Jibeen, 2015; Wongpakaran, Wongpakaran, & Ruktrakul, 2011; Yasin & Dzulkifli, 2010) and campus connectedness has a positive significant influence on the psychological well-being of individuals. The studies reviewed for this chapter reveal that campus connectedness, perceived social support, and coping can influence the levels of stress, anxiety, and depression among nursing students. Students who feel well connected to their learning environment and those who get support from family, peer and significant others may have lower levels of stress, anxiety, and depression. Likewise, use of adaptive coping has shown to decrease the risk of stress, anxiety, and depression among nursing students. Although there are few studies published on stress and coping, there is no nationwide prevalence study done on anxiety and depression among Nepalese nursing students. Also, there was no published research found that examined the role of campus connectedness and social support on stress, anxiety, and depression among nursing students. The other gap found in the literature is the limited research on campus connectedness as it is the newer concept emerging from the concept of social

connectedness. Lee and Robbins (1995) recommended the use of campus connectedness scale among college students for strengthening its operationalization.

The findings from this study will fill the gap in the literature by providing information in the context of Nepal. The next chapter on research methodology provides the detailed overview on the approach for answering the research questions and filling the gaps in the literature. In Chapter 3, I describe the rationale for selecting the research design, study variables, population of the study, sampling procedures, determining sample size, instrumentation with their validity and reliability. I also provide operational definitions of study variables for clarification and plan for analyzing the data. Finally, Chapter 3 will also include the detailed ethical considerations and procedures.

Chapter 3: Research Method

Introduction

Stress, anxiety, and depression have a significant relationship with campus connectedness, social support, and coping among college students (Bales et al., 2015; Bukhari & Afzal, 2017; Eckberg et al., 2017; Pidgeon et al., 2014). However, in Nepal, lack of literature fails to provide evidence for the relationship of campus connectedness, social support, and coping with stress, anxiety, and depression. My purpose in this nonexperimental descriptive correlational study was to determine the relationship of campus connectedness, perceived social support, and coping with levels of stress, anxiety, and depression among nursing students in Nepal. I used a cross-sectional, quantitative design to examine the role of campus connectedness, social support and coping on the levels of stress, anxiety, and depression. I also explored the prevalence of stress, anxiety, and depression among undergraduate nursing students.

This chapter has five major sections: (a) research design and rationale, (b) methodology, (c) instrumentation and operationalization of constructs, (d) threats to validity, and (e) ethical procedures. In these sections, I provide a detailed description of the study variables, reason for selecting research design, population, sampling and sampling procedures, recruitment procedures, participation, and data collection, specification on instrumentation, external and internal validity, and ethical concerns and procedure including the institutional review board at Walden University and in Nepal.

Research Design and Rationale

Variables

I identified and defined the variables as predictor and outcome variables in this study. In correlational studies that describe predictive relationships between the variables and where none of the variables are manipulated and controlled (Grove et al., 2013), the more accurate term for the independent variable is *predictor variable* (Houser, 2015). Similarly, the dependent variable in correlational studies is referred to as an outcome variable (Houser, 2015). The predictor variables in this study were perceived campus connectedness, perceived social support, and coping, whereas the outcome variables were stress, anxiety, and depression.

Research Design and Research Questions

The research question that reflected a need to determine the relationship between variables could be best answered by conducting correlational research (Houser, 2015). The correlational studies are considered descriptive, because the variables in the study are not manipulated or controlled (Houser, 2015). The research questions in this study were (a) What is the relationship of campus connectedness with levels of stress, anxiety, and depression among nursing students in Nepal? (b) What is the relationship of perceived social support with levels of stress, anxiety, and depression among nursing students in Nepal? (c) What is the relationship of coping with levels of stress, anxiety, and depression among nursing students in Nepal? Because this was a descriptive correlational study, several surveys were used to determine the levels of stress, anxiety, and depression, campus connectedness, perceived social support, and coping applied among

the nursing students. I describe these surveys in a later section. Appropriate statistical tests that I planned to determine the relationships between the variables included one-way multivariate analysis of variance (MANOVA), Pearson's correlation coefficient, and multivariate linear regression.

Time and Resource Constraints

The time and resource constraints related to the research design in this study was due to the large sample that was required in this study. Grove et al. (2013) suggested including a large sample size to determine relationship in correlational studies. The cost of printing increased with more number of participants in the study. Conducting this study at multiple sites also increased the cost and data collection time. The time constraint for the participants in answering the questionnaire was estimated to take 40 to 45 minutes.

Research Design Choice Rationale

A research design is a blueprint of the study that guides the researcher at various steps of the research process (Frankfort-Nachmias, Nachmias, & DeWaard, 2013; Grove et al., 2013). The selection of research design depends on factors such as the worldview of the researcher, research problem, the purpose of the study, and the research questions (Creswell, 2009; Grove et al., 2013). The worldview that governed this study was postpositivism in which deductive approach starts with Lazarus and Folkman's (1984) theory of stress, coping, and adaptation. Postpositivists believe in making an empirical observation and using measurement (Creswell, 2009). Using instruments that produces numerical data, I measured the variable in this study. I analyzed the collected data using

statistical tests and hypothesis testing. Therefore, selecting quantitative design supported my worldview of postpositivism.

Furthermore, the research problem and questions in this study indicated the need for examining the relationships between the study variables including campus connectedness, social support, coping, and stress, anxiety, and depression among nursing students in Nepal. Quantitative design, particularly, a correlational design, is the most appropriate design in examining the relationships between the variables (Creswell, 2009; Grove et al., 2013). The reasons for selecting a cross-sectional design include cost and time factors (Polit & Beck, 2008) as the data were collected one point in time. Last, the literature related to this study has revealed that several researchers have used cross-sectional descriptive correlational research design to examine the relationship between the variables (Clark et al., 2014; Klainin-Yobas et al., 2014). Reasons, as mentioned previously, justify that descriptive cross-sectional correlational quantitative design was the most appropriate design for my study.

Methodology

Target Population and Population Size

The target population was composed of all individuals who met the sampling criteria regarding whom the researcher would like to generalize findings (Grove et al., 2013; Polit & Beck, 2008). The target population in this study included all undergraduate BSc nursing students who were enrolled in the colleges affiliated to two universities in Nepal at the time of data collection. The BSc nursing program is a 4-year degree program. The average age of the students ranges from 18 to 24 years. The BSc program

in Nepal enrolled only female candidates at the time of data collection. The target population included 18 colleges. Based on the student enrollment in the year 2017, the estimated target population size in this study was 1,320.

Sampling and Sampling Procedure

Once I defined the target population, the next step was to draw a sample that represented the population adequately (Frankfort-Nachmias et al., 2013). Making an intelligent judgment about sampling is a crucial part of a research process that the researcher needs to consider carefully (Grove et al., 2013). I used convenience sampling method in this current study. Convenience sampling is one of the nonprobability sampling strategies that nurses widely use while selecting the sample for their research (Polit & Beck, 2008). Although nonprobability sampling restricts the generalizability of the study findings to the larger population, the advantages of this method include the convenient usability and economy (Polit & Beck, 2008). The selection bias that may occur in using convenience sampling in this study was reduced by excluding the participants known to me personally and the nursing students from the college where I am employed.

Sampling frame. The sampling frame helps to identify the sample from the target population (Martinez-Mesa, Gonzalez-Chica, Duquia, Bonamigo, & Bastos, 2016). In the current study, the sample frame included list of colleges which were the target population. The lists of colleges were obtained from the official websites of the universities. After identifying the colleges having BSc (N) program, I obtained the phone list of the campuses/colleges for the purpose of contacting the campus chief or principal

of the prospective colleges for discussing the possibility of conducting research in their college among students.

Power analysis and sample size. Using G* Power 3.1, I calculated the sample size in this study. Erdfelder, Faul, and Buchner (1996) developed G* Power, which is widely used for common statistical tests in social and behavioral sciences (Erdfelder et al., 1996; Field, 2014). This computer software program can be downloaded for free on computers to calculate sample size (Field, 2014). Using G* Power software, a priori power analysis for MANOVA with global effects was performed. I set the conventional value as .05 (Field, 2014), power at .80 (Cohen, 1969), and a medium effect size of .0625, two groups, and three response variables. The sample size predicted necessary for this study was 180.

Procedures for Recruitment, Participation, and Data Collection

My initial plan was to collect data from the BSc (N) students enrolled in the various colleges affiliated to the two universities in Nepal. I obtained data by using self-administered paper-pencil survey method for measuring the variables including stress, anxiety, depression, campus connectedness, social support, and coping. In the following subsections, I discuss the plans for recruiting participants, demographics, informed consent, data collection, and participant exit procedures.

Participant recruitment and demographics. I recruited the study participants by visiting the colleges and providing face-to-face information about the research to the principals and the nursing students. I also informed the students about the snack and pen they will receive at the end of completing the surveys. In Nepal, the researcher is required

to approach the principal of the School to discuss the research, who then decides whether to allow the researcher to meet the students during their school hours to invite them to participate in the study. I requested the students willing to participate in the study to come on a particular day and time in their classroom where data were collected. Inviting the students face-to-face did not require fliers.

The demographic information collected from the participants included age, current living arrangements, marital status, residence before joining college, arrangement for paying fee, financial status, the reason for choosing nursing, availability of counseling services in the college, counseling service providers, and current academic year.

Informed consent. After informing students the purpose of the current study and the criteria for participating in the study, I administered the informed consent form that included the purpose, risks, benefits of the study and verification of meeting criteria. Initially, I planned to obtain signed consent from the participants before data collection. The consent procedure was verified with the Walden IRB. I informed the participants that they are free to leave the study at any time if they do not wish to continue to participate in the study.

Data collection. I personally distributed the paper-pencil data collection tools to the participants after scheduling the date and time with the program coordinators and class advisors of the nursing colleges. The data were collected in the college where the students were enrolled. Although internet-based surveys save time and are less expensive (Frankfort-Nachmias et al., 2013), the idea of internet surveys may not have been an appropriate approach for collecting data due to lack of personal computers and internet

connectivity in all households. On the other hand, distribution of questionnaire and collection of data in person was time-consuming and expensive. However, this approach maximizes the number of completed questionnaires (Polit & Beck, 2008). In-person collection of data may also allow the researcher to clarify any possible queries of the participants (Polit & Beck, 2008). The participants were required to complete a pencil-and-paper copy of the survey. The estimated time required to complete the survey questionnaire ranged from 40-45 minutes. Nursing students completed the surveys during their free time in the college. Each participant received a pen and a snack as a small token of appreciation for their participation. I informed the participants that they would receive the results of the study. Reviewing the results of the study may increase the participants awareness of their own need of social support, campus connectedness and adaptive coping.

Participant exit procedure. The last page of data collection survey document contained a note thanking the participants for their participation in the study. Also, the participants were provided with a snack before they left the classroom as a token of appreciation for their participation.

Instrumentation and Operationalization of Constructs

In this study, four self-reported instruments were used for measuring the concepts of stress, anxiety, depression, campus connectedness, social support, and coping among nursing students. The brief information is provided in the following subsections and summarized in Table 1.

Table 1

Overview of Instruments

	Variable	Instrument	No. of items	Estimated time (min.)
Predictor variables	Campus connectedness	Campus connectedness scale (Lee & Robbins, 1995)	14	6-7
	Perceived social support	Multidimensional scale for perceived social support (Zimet et al., 1988)	12	5-6
	Coping	Brief cope inventory (Carver, 1997)	28	14-15
Outcome variables	Stress Anxiety Depression	Depression anxiety stress scale (Lovibond & Lovibond, 1995)	21	10-11

Depression Anxiety Stress Scale

Lovibond and Lovibond (1995) developed DASS-42-item scale which was a modified version of Self Analysis Questionnaire (SAQ) developed by Lovibond in 1983. DASS-21 is a shorter version of Dass-42 that contains three subscales including DASS-21-D for depression, DASS-21-A for anxiety, and DASS-21-S for stress. Each subscale consists of 7-items each. This scale was designed to measure negative emotional states of depression, anxiety, and stress for clinical as well as non-clinical samples and is suitable for screening normal adolescents and adults (Lovibond & Lovibond, 1995; Tran, Tran, & Fisher, 2013). The advantages of DASS-21 over the full version of DASS are twofold.

First, it is shorter, less time consuming, convenient and more acceptable for participants, while maintaining required reliability, consistency and integrity (Henry & Crawford, 2005). The second advantage is that DASS -21 omits problematic items out of the full DASS, thus providing cleaner structure (Henry & Crawford, 2005). The DASS-21 is available in public domain for the research purpose provided there are no modifications made to the tool. However, permission was obtained to use the tool from Dr. Peter Lovibond (see appendix A). A copy of DASS -21 can be viewed as Appendix F.

In the original study, DASS-21 indicated good internal consistency in which the Cronbach alpha were .88, .82, .90, and .93 for Depression, Anxiety, Stress, and Total scale respectively (Lovibond & Lovibond, 1995). The DASS-21 has also been validated in populations such as Hispanic, American, Australian, and British adults (Crawford et al., 2009; Norton, 2007). The DASS-21 is found to have good reliability and validity among Asian population including Malaysia, Indonesia, Singapore, Sri Lanka, Taiwan, and Thailand (Oei, Sawang, Goh, & Mukhtar, 2013), Nepal (Kunwar, Risal, & Koirala, 2016), and India (Singh et al., 2015).

Campus Connectedness Scale (CCS)

Lee and Associates (Lee & Davis, 2000; Lee et al., 2002) developed CCS from Social Connectedness Scale (SCS) (Lee & Robbins, 1995; Lee et al., 2001). CCS is a 14-item self-report scale that measures students' psychological sense of belongingness on college campus (Lee & Davis, 2000) (see Appendix G). CCS is a 6-scale Likert scale from 1 (strongly disagree) to 6 (strongly agree). The original internal reliability of CCS is .92 (Lee & Davis, 2000). The CCS has shown quality psychometrics with college student

samples (Summers et al., 2002; Sulkowski, 2011). Hollister, Scalora, Hoff, and Marquez (2014) reported Cronbach's alpha of .94 in their study. The CCS has been used among colleges students in Australia (Bales et al., 2015; Eckberg et al., 2017), United States (Bales, et al., 2015; Eckberg et al., 2017; Hollister et al., 2014; Summers et al., 2002), Hong Kong (Bales et al., 2015; Eckberg et al., 2017), and South Africa (Pym, Goodman, & Patsika, 2011). I have obtained permission from the author, Dr. Richard Lee to use CSS in my study (see Appendix B).

Multidimensional Scale of Perceived Social Support (MSPSS)

Zimet et al. (1988) designed MSPSS for the purpose of assessing the subjective perceptions of the individuals toward social support. The MSPSS includes 12 items, four items for each subscale: family, friends, and significant others (Zimet et al., 1988). The items are scaled from 1 (very strongly disagree) to 7 (very strongly agree). A copy of MSPSS can be viewed as Appendix H. The MSPSS has shown to have good reliability, good validity, and a fairly suitable factorial structure (Hardan-Khalil & Mayo, 2015; Zimet et al., 1988). The MSPSS has shown strong internal consistency for the tool's total score (.93 to .98) and for the subscales (.81 to .91) among college students (Bukhari & Afzal, 2017; Clara, Cox, Enns, Murray, & Torgrudc, 2003; Hardan-Khalil & Mayo, 2015; Rahat & Ilhan, 2016; Zimet et al., 1988). The scale been translated into many languages and is widely used and tested in populations within and outside the United States (Hardan-Khalil & Mayo, 2015) including Pakistan (Bukhari & Afzal, 2017), United States of America (Mahmoud et al., 2015), China (Kong, Ding, & Zhao, 2015; Wang et al., 2014), Turkey (Rahat & Ilhan, 2016; Yildirim et al., 2017), Iran

(Ariapooran, 2014), South Korea (Jun & Lee, 2017), Australia (Eckberg et al., 2017), India (Sawant & Jethwani, 2010), Malaysia (Guan et al., 2013; Mohammad, Al-Sadat, Loh, & Chinna, 2014), Thailand (Ratanasiripong, 2012), and Sweden (Ekback, Benzein, Lindberg, & Arestedt, 2013). I have obtained the permission to use MSPSS from the original author, Dr. Gregory Zimet (see appendix C).

Brief Cope Inventory (BCI)

Charles Carver developed BCI (Carver, 1997) to measure the coping strategies that the individuals use when facing stressful situations. Cope is a-60-item instrument comprising 15 scales of four items each (Carver, 1997) whereas, the BCI is a shorter version of Cope. BCI consists of 14 scales with two items each, thus making it a 28-item inventory. A copy of BCI can be viewed as Appendix I. The responses on the BCI ranges from 0 (I haven't been doing this at all) to 3 (I have been doing this a lot) on a 4-point Likert scale. The BCI can be used for research purposes without seeking author's permission (see Appendix D).

The fourteen dimensions included in BCI are self-distraction, active coping, denial, substance abuse, use of emotional support, use of instrumental support, behavioral disengagement, venting, positive reframing, planning, humor, acceptance, religion, and self-blame (Carver, 1997; Monzani et al., 2015). The original reliability of scale indicated high Cronbach's alpha for domain religion (.82), and substance scale (.90). The internal consistency for the other domains were .50 to .73 (Carver, 1997).

The BCI, one of the most frequently used self-reported scale (Tada, 2017) has been widely used around the world among various groups including nursing students (Ab

Latif & Mat Nor, 2016; Cherkil et al., 2013; Gibbon, 2010; Mahmoud et al., 2015; Sreeramreddy et al., 2007; Tada, 2017; Yehia et al., 2016).

Demographic Items

The list of demographic items included age, current living arrangements, marital status, residence before joining college, arrangement for paying fee, financial status, the reason for choosing nursing, availability of counseling services in the college, counseling service providers, current academic year (see Appendix E). the estimated time for completing these items was between 5 and 6 minutes.

Variable Operationalization

The concepts in this study include stress, anxiety, depression, campus connectedness, social support, and coping. These variables are conceptually defined in Chapter 1. In quantitative research, I explained how the variable will be observed and measured in the study. An operational definition of the concept specifies the operations that researcher plans to carry out to collect and measure the required information (Polit & Beck, 2008).

Stress. The DASS-21 (Lovibond & Lovibond, 1995) is comprised of three subscales, i.e., DASS-S for Stress, DASS-A for Anxiety, and DASS-D for Depression, that measure the symptoms related to stress, anxiety, and depression experienced by the participants over the past week. The instrument is a 4-point-Likert scale with seven items each for subscales. Each item has a statement with four response options to reflect the severity of stress, anxiety, and depression. The score responses start from 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). On DASS-21, the Stress subscale items are 1, 6, 8, 11, 12, 14, 18. The Anxiety subscale items include 2, 4, 7, 9, 15, 19, 20, and the Depression subscale items are 3, 5, 10, 13, 16, 17, 21.

The concept of stress in this study was measured using DASS-S, a subscale of DASS-21 (Lovibond & Lovibond, 1995). The subscale of stress comprises of seven items. The score on DASS-S ranges from 0 to 21 that was multiplied by 2 to calculate the final score for Stress subscale, which is 42. The cut-off score according to the severity of stress is Normal (0-14), Mild (15-18), Moderate (19-25), Severe (26-33), Extremely Severe (34+).

Anxiety. DASS-A was used to measure the level of anxiety among nursing students in this study. DASS-A is a subscale of DASS-21 (Lovibond & Lovibond, 1995). DASS-A also comprises of seven items that have four statements similar to DASS-S subscale. The total score on DASS-A ranges from 0 to 21, which was multiplied by 2 to make a total score of 42. The cut-off scores from anxiety are: Normal (0-7), Mild (8-9), Moderate (10-14), Severe (15-19), Extremely Severe (20+).

Depression. The third subscale of DASS-21, DASS-D (Lovibond & Lovibond, 1995) was used to measure the symptoms of depression among nursing students. The score on this scale ranges from 0 to 21, which was multiplied by 2 to make the total score of 42. The recommended cut-offs scores for depression are: Normal (0-9), Mild (10-13), Moderate (14-20), Severe (21-27), Extremely Severe (28+).

Campus connectedness. I used CCS (Lee & Davis, 2000; Lee et al., 2002) for measuring campus connectedness among nursing students in this study. CCS is a social connectedness scale that measures students' perception of their sense of belongingness to the campus or college (Lee & Davis, 2000; Lee et al., 2002). CCS is a-6-point-Likert scale comprising of 14 items, out of which, eight items are negative (2, 5, 6, 8, 10, 11, 13, 14). The rating response on this scale include 1 = strongly disagree, 2 = Disagree, 3 = mildly disagree, 4 = mildly agree, 5 = agree, 6 = strongly agree. The negative items will have a reverse scoring such as 1 = strongly agree, 2 = agree, 3 = mildly agree, 4 = mildly disagree, 5 = disagree, 6 = strongly disagree). The CCS score ranges from 14 to 84. The item means score with a possible range from one to six was calculated by dividing the total scale score by 14 (Lee et al., 2001). High scores on CCS reflect a stronger sense of campus connectedness.

Social support. The concept of perceived social support was measured using MSPSS (Zimet et al., 1988). This scale comprises of three subscales: family, friends, and significant other which is a 12-item scale with 7-Likert responses (1 = very strongly disagree), 2 = strongly disagree, 3 = mildly disagree, 4 = neutral, 5 = mildly agree, 6 = strongly agree, 7 = very strongly agree). In this study, the scoring was done based on mean scale score. Mean scale score denotes low support (1-2.9), moderate support (3-5), high support (5.1-7). The mean score was calculated by adding up the score in each subscale separately and diving by four. The subscale for *significant other* are the items 1, 2, 5, & 10, the items 3, 4, 8, & 11 comprises the *family* subscale, and subscale *friends*

include items 6, 7, 9, & 12. The total score was obtained by summing across all 12 items and dividing it by 12.

Coping. The concept of coping in this study was operationalized using BCI (Carver, 1997). BCI consists of 14 scales that has two items each making a total of 28 items. These items assessed which of the 14 coping strategies nursing students use. In this instrument, the strategies on BCI are classified into adaptive and maladaptive coping. The items on this scale are rated by a-4-point Likert scale ranging from 1 = I haven't been doing this at all, 2 = I have been doing this a little bit, 3 = I have been doing this a medium bit, 4 = I have been doing this a lot. While using BCI, the students were instructed to think about a relevant stressor they encountered recently and to indicate how they coped with it by selecting the options or strategies on the scale. There is no overall score for BCI. The coping strategies can be grouped into adaptive coping and maladaptive coping. In this study, the coping styles that are grouped as problem-focused coping include active coping, planning, positive reinterpretation/reframing, acceptance, and instrumental support (Mahmoud et al., 2012, 2015). The emotion-focused coping included self-distraction, denial, venting, substance use, behavioral disengagement, use of emotional support, religion, humor, and self-blame (Mahmoud et al., 2012, 2015).

Data Analysis Plan

Data analysis software and storage. I used Statistical Package for the Social Sciences (SPSS) for Mac version 23, a computer software program for storage and analysis of the data in this study. Data was manually transferred to the SPSS using codes for the variables. I double checked the data entries for errors. The data was stored on my

personal computer within SPSS program in a file which was password protected. I was the only one who had access to my laptop. I also stored the data on an external hard drive as a backup which was also password protected. The external hard drive was placed in a locked cabinet when not in use. The participants' response sheets were stored and locked in a locked file cabinet in a locked cabinet.

Data cleaning and screening procedures. I cleaned the data obtained from the nursing students before data analysis. Data cleaning is the proofreading of the data to find out and correct errors and inconsistent codes (Frankfort-Nachmias et al., 2013). Data cleaning involves a check for outliers and wild codes (Polit & Beck, 2008). Outliers are the values that lie outside the normal range of values (Field, 2014). A wild code is a coded value that is not legitimate within the coding scheme for the data set. (Polit & Beck, 2008). I generated a frequency distribution for each variable to check for outliners and wild codes. I also checked the data for internal consistency by testing the compatibility of data within each participant's responses to the items. If the outlier was due to the incorrect entry of data, I rechecked the response of the participants for the correct response. If the outlier still persisted, I did not eliminate them from analysis because the responses remained within the minimum and maximum range of measuring scales. If the students failed to complete any tool, I dropped them out from the analysis. If there were missing responses on the same tool, I planned to consider up to 5% of missing data for analysis (Schafer, 1999).

Research question and hypotheses. The data analysis was done in accordance with the research questions and hypotheses formulated in this study. The research

questions in this study were: (a) What is the relationship of campus connectedness with levels of stress, anxiety, and depression among nursing students in Nepal? The null hypothesis was that there is no relationship of campus connectedness with levels of stress, anxiety, and depression among nursing students in Nepal. The alternative hypothesis was that there is a relationship of campus connectedness with levels of stress, anxiety, and depression among nursing students in Nepal.

(b) What is the relationship of perceived social support with levels of stress, anxiety, and depression among nursing students in Nepal? The null hypothesis was that there is no relationship of perceived social support with levels of stress, anxiety, and depression among nursing students in Nepal. The alternative hypothesis was that there is a relationship of perceived social support with levels of stress, anxiety, and depression among nursing students in Nepal.

(c) What is the relationship of coping with levels of stress, anxiety, and depression among nursing students in Nepal? The null hypothesis was that there is no relationship of coping with levels of stress, anxiety, and depression among nursing students in Nepal. The alternative hypothesis was that there is a relationship of coping with levels of stress, anxiety, and depression among nursing students in Nepal.

Analysis plan.

Statistical tests. I analyzed the data using descriptive and inferential statistics. The descriptive statistics was used to describe the sociodemographic variables of the sample. The tests included frequencies, means, and standard deviations. The inferential statistics was used to examine the correlation between the variables such as campus

connectedness, perceived social support, coping and stress, anxiety, depression. I planned to use two-way multivariate analysis of variance (MANOVA), Pearson's correlation coefficient, and multivariate linear regression test for testing the null hypotheses in my study.

MANOVA test can be used when there are several independent and dependent variables (Field, 2013; Polit & Beck, 2008). In this study, the predictor variables include campus connectedness, social support, and coping, whereas, the outcome variables are stress anxiety and depression.

Pearson's correlation coefficient test was performed to measure the strength of the relationship between outcome variables (Field, 2014). This statistical test has been widely used for examining the relationship between the variables.

Multivariate linear regression test. I also planned to use multivariate linear regression to determine if the significant correlations are found between the variables. This test can be done for determining if a significant correlation exists after controlling for confounding factors (Tada, 2017) such as living arrangements, the decision on studying nursing, academic year, and financial status.

Threats to Validity

Threats to External Validity

The external validity determines how findings of the study findings will be applicable, useful, and generalizable to a larger population (Houser, 2015). In my study, the use of convenience sampling, a non-probability sampling technique may have posed a threat to the external validity. However, this issue was addressed by selecting students

from multiple nursing colleges. Multiple sites studies are powerful because more confidence in the generalizability of the results can be attained if those results have been replicated in several sites (Polit & Beck, 2008). Also, only generic bachelor students (B.Sc.) students with twelve years of school education were involved in the study. These actions may reduce the threat to external validity in the study. Correlational studies require the researcher to include a large sample in the study to obtain a true reflection of variables being measured (Houser, 2015).

Threats to Internal Validity

Internal validity is the extent to which the effects detected in the study are the true reflection of reality rather than the result of extraneous variables (Polit & Beck, 2008). Internal validity is addressed more commonly in experimental research or research examining causality (Grove et al., 2013). In the correlational study, there are no experimental and control groups. Therefore, the issues related to history, selection, maturation, and testing effect may have less relevance for judging the internal validity (Mitchell, 1985). Selection bias is one of the frequently encountered threats to the internal validity of the studies not using experimental design (Grove et al., 2013). This correlational study may pose a threat to internal validity due to the non-randomized selection of the participants. The selected students may not have the same perception of the concepts of stress, anxiety, depression, campus connectedness, social support, and using coping strategies than those students who are not selected.

Threats to Construct Validity

Construct validity examines the fit between the conceptual definitions of variables and the measures used for operationalization (Grove et al., 2013). It is a key criterion for assuring the quality of the study (Polit & Beck, 2008). The conceptual definitions provide the basis for the operational definitions of the variables. The threat to construct validity may occur due to inadequate preoperational clarification of constructs. In this study, the concepts are well defined, both conceptually and operationally using concept analysis in literature. The instruments that operationalized the conceptual definitions of the concepts are well-validated by the developers. The methods used for minimizing the threat to construct validity include convergent and discriminant validity, and factor analysis (Houser, 2015; Walkey & Welch, 2010). The researchers have established construct validity in their instruments using convergent validity, discriminant validity or factor analysis.

Lee and Robbins (2000) reported a confirmatory factor analysis that revealed strong goodness fit (alpha = .91) between the construct of campus connectedness scale and another belongingness construct, social awareness. Likewise, Canty-Mitchell and Zimet (2000) conducted a factor analysis to confirm the three-factor structure proposed by Zimet et al. (1988) in establishing MSPSS, a tool to measure social support. Correlation with the Family Caring Scale supported discriminant validity of the family subscale of MSPSS (Canty-Mitchell & Zimet, 2000). Henry and Crawford (2005) tested and found that the construct validity of DASS-21 in a large non-clinical sample had adequate construct validity. The convergent validity of DASS-21 in Asian population was

measured and found to be well correlated with other measures of depression, anxiety, and stress including Beck Depression Inventory (BDI), the Beck Anxiety Inventory (BAI) and Positive and Negative Affect Schedule (PANAS) (Oei et al., 2013).

Ethical Procedures

Access to Subjects

First, I approached the Campus Chief and the Principal of the prospective colleges to enroll the participants in this study. The study frame was used to identify the nursing colleges and respective contact persons. The Principals were contacted by phone first. Subsequently, a formal letter via email was sent to them requesting them to allow their students to participate in my study. After obtaining the permission from the College authorities, I visited each college personally for recruiting the participants for this study.

Treatment of Human Subjects

Institutional Review Board (IRB) review. I obtained ethical approval from the IRBs of Walden University (approval # 05-30-18-0515340) and Nepal Health Research Council (NHRC Reg. no. 280/2018). Although most data collection sites accept the NHRC's IRB approval for data acquisition, they have a local research committee that oversees the research work in the college.

Ethical concerns related to recruitment. The ethical concern that may have arose while recruiting the participants for the study involves the willingness to participate in the study. The undergraduate nursing students may have felt pressured to participate in the study against their wishes. To address this concern, I explained to the participants that they can opt out from participating in the study if they do not want to participate. I also

clarified that opting out from the study will not offend me and it will not affect their academic evaluation in any way. No identifying information was requested on the survey or demographic data sheet. Paper surveys was necessary because most undergraduate students in Nepal do not own their own computers and not all have access to the internet. The other strategy that I adapted to avoid this concern was to exclude students enrolled in my place of employment.

Ethical concerns related to data collection. I obtained implied consent from the participants prior to data collection according to Walden's IRB requirement. I first distributed a copy of a consent form to each participant and explained the content of the consent form before asking them to give their consent. I also clearly stated that during the data collection if the participants desire not to continue, they were allowed to leave anytime without any negative consequences.

Issues Related to Data Treatment

Data anonymity. The data obtained was treated anonymously. The participants were not required to reveal their names, street address, phone number, and email address and the name of their college, instead the code number was used. Excluding the students from my workplace in the study also eliminated the risk of invading the privacy of the participants. The consent was implied; therefore, the names of the participants were not required.

Data protection. Soon after data collection, I stored the data on a personal Mac in a password protected file so that I alone could access the data. Since I collected data in a paper form, the paper sheets were kept in a locked closet. I did not share any data with

anyone, although an anonymous data may not pose a threat to the privacy of the participants. I plan to destroy the data after five years of study completion date.

Summary

A quantitative, descriptive, cross-sectional correlational study design was used to examine the relationship of campus connectedness, social support, coping, with stress, anxiety, and depression among undergraduate nursing students in Nepal. I used self-administered survey instruments including DASS-21, CCS, MSPSS, and BCI to measure stress, anxiety, depression, perceived campus connectedness, perceived social support, and coping respectively. The convenience sampling was used to recruit participants for the study. The ethical approvals were obtained from IRBs of Walden University and ERB of NHRC before data collection. The data were securely stored and analyzed by using computer software SPSS version 23 for Mac. I present data analysis and results in Chapter 4.

Chapter 4: Results

Introduction

My purpose in this nonexperimental, descriptive, correlational study was to determine the relationship of campus connectedness, perceived social support, and coping with levels of stress, anxiety, and depression among nursing students in Nepal. The research questions were:

RQ1: What is the relationship of campus connectedness with levels of stress, anxiety, and depression among nursing students in Nepal?

$H_0$1: There is no relationship of campus connectedness with levels of stress, anxiety, and depression among nursing students in Nepal.

H_a1: There is a relationship of campus connectedness with levels of stress, anxiety, and depression among nursing students in Nepal.

RQ2: What is the relationship of perceived social support with levels of stress, anxiety, and depression among nursing students in Nepal?

$H_0$2: There is no relationship of perceived social support with levels of stress, anxiety, and depression among nursing students in Nepal.

H_a2: There is a relationship of perceived social support with levels of stress, anxiety, and depression among nursing students in Nepal.

RQ3: What is the relationship of coping with levels of stress, anxiety, and depression among nursing students in Nepal?

$H_0$3: There is no relationship of coping with levels of stress, anxiety, and depression among nursing students in Nepal.

H_a3: There is a relationship of coping with levels of stress, anxiety, and depression among nursing students in Nepal.

In this chapter, I discuss the data collection, time frame, and the results of the study, using tables and graphs, I display the results.

Data Collection

I originally planned for data collection among the BSc nursing students enrolled in the colleges affiliated to two health sciences universities in Nepal. The target population consisted of 1,320 students. However, due to the logistic issues that required long travels and non-availability of students during the data collection period, I included only one university that had 14 colleges with 1,072 students enrolled for BSc nursing program. I received permission for data collection from nine colleges that had altogether 744 students enrolled. After obtaining the ethical approval from Walden-IRB (approval # 05-30-18-0515340), and NHRC-ERB (Reg. no. 280/2018), I started data collection. Data collection occurred from June 1, 2018, through July 10, 2018. I have described the data collection implementation in Table 2.

Table 2

Data Collection Implementation

Dates	College	No. of enrolled students	No. of participants
June 1	01	80	72
June 2 & 15	02	78	75
June 5 & 6	03	77	65
June 7, 13, 25, & July 1	04	79	75
June 8, 11, 12, 15	05	118	111
June 10 & 21	06	77	56
June 14	07	77	76
June 15 & 24	08	78	77
June 16 & July 10	09	80	73

As a result of IRB process, I changed the plan for signed informed consent to implied consent to ensure the anonymity of data. I collected data by visiting the colleges upon students' availability. Initially, I estimated 40 to 45 minutes for the completion of the self-administered survey forms. However, the students did not exceed 30 minutes for completing the survey forms.

The minimum sample size as determined by G*Power was 180, using MANOVA for global effect, 95% power, with the alpha level of 0.05, and with a medium effect size of .0625. Correlational studies require the researcher to include a large sample in the study to obtain a true reflection of variables being measured (Houser, 2015). Therefore, I recruited 744 BSc nursing students for this study. Of 744 students, 682 students participated in this study, which yielded a response rate of 91.7%. Upon closing the survey, I manually entered the data into IBM SPSS 23 for storage and analysis. I double-checked the entry of data for completion and accuracy.

The sociodemographic characteristics of the sample included age, current living arrangements, marital status, residence before joining college, arrangement for paying the fee, financial status, the reason for choosing nursing education, availability of counseling services in the college, counseling service providers, and current academic year. I have presented the sociodemographic characteristics of the sample into personal characteristics, financial characteristics, educational characteristics, and counseling in the results section.

The use of convenience sampling, a nonprobability sampling technique may have posed a threat to the external validity. However, this issue was addressed by selecting students from nine nursing colleges. Multiple sites studies are powerful because more confidence in the generalizability of the results can be attained if those results have been replicated in several sites (Polit & Beck, 2008). Also, only generic bachelor students (BSc) students with 12 years of school education were involved in the study. These actions may reduce the threat to external validity in the study. Correlational studies

require the researcher to include a large sample in the study to obtain a true reflection of variables being measured (Houser, 2015). The students enrolled for BSc nursing program in the selected university were 1,072, of which 682 participated in this study. A large sample size may have reduced the threat to Type I error and strengthened the external validity.

Statistical Analyses

In the result section, I include the descriptive statistics such as frequency, percentage, mean, standard deviation of the participants' baseline information and the survey instruments such as DASS-21, CCS, MSPSS, and BCI. I also include the tests for normal distribution and reliability for the instruments used in this study. The inferential statistics for addressing the research questions and testing the null hypotheses complete the result section.

Descriptive Statistics of Sociodemographic Characteristics

The total number of students who consented for participating in the study were 682, of which two participants did not complete the survey forms and were excluded from the study. I included 680 participants response in data analysis. Table 3 depicts the personal characteristics of the sample including age, marital status, residence before joining campus, and current living arrangement. The BSc nursing students who participated in this study were between the ages of 18 and 27 ($M = 20.29 \pm SD = 1.65$). The majority of participants (69.1%, $n = 470$) reported living with family, followed by 17.8% ($n = 121$) of participants living in the hostel and 96.5% ($n = 656$) were unmarried at the time of data collection.

Table 3

Sociodemographic Information: Personal Characteristics

Characteristics	Frequency (*n*)	Percentage (%)
Age (*M* = 20.29, *SD* = 1.65)		
Marital status		
Single	656	96.5
Married	21	3.1
Divorced	3	.4
Residence prior to joining campus		
Rural	112	16.5
Urban	568	83.5
Current living arrangement		
Hostel	121	17.8
Living with family	470	69.1
Living with relatives	63	9.3
Others	26	3.8

Financial characteristics measured were the arrangement for paying college fee and difficulty in paying the fee on time. These characteristics are listed in Table 4.

Table 4

Sociodemographic Information: Financial Characteristics

Characteristics	Frequency (*n*)	Percentage (%)
Arrangement for paying college fee		
Scholarship	57	8.4
Education loan	19	2.8
Parents/ Relatives	604	88.8
Difficulty in paying fee on time		
Yes	218	32.1
No	462	67.9

The educational characteristics include the reason for choosing nursing education and the current academic year of the participant. Table 5 lists the frequency of educational characteristics. The majority of the participants (72.4%, *n* = 492) reported self-interest as the reason for choosing nursing education. A small number of participants (*n* = 16) stated other reasons for choosing nursing education such as unavailability of other professional education, peer influence, and opportunity for foreign-based jobs in future.

Table 5

Sociodemographic Information: Educational Characteristics

Characteristics	Frequency (*n*)	Percentage (%)
Reason for choosing nursing education		
Self- interest	492	72.4
Parents' influence	109	16.0
Failure in interested field	63	9.3
Others	16	2.4
Current academic year		
First	183	26.9
Second	177	26.0
Third	167	24.6
Fourth	153	22.5

Table 6 depicts the frequency of the sample response for the availability of counseling services in the college. A majority of the participants (79.4%, *n* = 540) reported that there were no counseling services available in their college.

Table 6

Sociodemographic Information: Counseling Services

Characteristics	Frequency (*n*)	Percentage (%)
Availability of counseling services in college (*N* = 680)		
Yes	140	20.6
No	540	79.4
Counseling provider (*n* = 140)		
Faculty	77	55.0
Professional counselor	18	12.9
Administrative staff	44	31.4
Others	1	.7

Descriptive Statistics of Sample Variables

Using the paper-pencil survey method, I measured the predictor variables of campus connectedness, perceived social support, and coping and the outcome variables of stress, anxiety, and depression. The six study variables were operationalized using four survey scales including CCS, MSPSS, Brief Cope Inventory, and DASS-21.

Campus connectedness. The predictor variable of campus connectedness was operationalized using the 14-items Likert scale (Lee & Davis, 2000; Lee et al., 2002). I measured the reliability of the CCS using a reliability test with Cronbach's alpha that had a value of .79. The initial validity of CSS had a Cronbach's alpha of .92 (Lee & Davis, 2000). The mean score (Table 7) was used as a cut off score for determining low and high connectedness in this study (Lee & Robbins, 1998). Mean score less than 62.42 was

considered as low connectedness, whereas mean score of 62.42 or above was categorized as high connectedness.

Perceived social support. The predictor variable of perceived social support was operationalized using the 12-item Likert scale MSPSS (Zimet et al., 1988). The tool reliability value of MSPSS with Cronbach's alpha in this study was .89, which was slightly lower than the initial value of .93 (Zimet et al., 1988). I categorized the perceived social support into low social support and high social support based on cut off score of individual mean score (Zimet et al., 1988). The individual mean score up to 4 was considered as low social support, and a mean score more than 4 was categorized into high social support.

Coping. I operationalized the predictor variable of coping using BCI (Carver, 1997), with 14 subscales consisting of two items each that indicate 28 coping strategies. Based on the Theory of Stress, Coping, and Adaptation by Lazarus and Folkman (1984) and Carver et al. (1989), I have analyzed the variable of coping into problem-focused and emotion-focused domains. The problem-focused domain has five coping strategies with two items each, whereas, the emotion-focused domain consists of nine coping strategies with two items each. Both problem-focused and emotion-focused coping were categorized into low- users and high- users based on median scores. For low- users of problem-focused coping, the cut off median score was less than 31 and for high- users, it was 31 or more. Whereas, a median score less than 40 was considered as low -users of emotion-focused coping and high- users were those who scored 40 or above. The overall internal consistency of BCI tool with Cronbach's alpha was .79, whereas, problem-

focused and emotion-focused domains had Cronbach's alpha of .72 and .73 respectively. The Cronbach's alpha value of original scale varied from .50 to .70 for each item (Carver, 1997).

Stress, anxiety, depression. I operationalized the outcome variables of stress, anxiety, and depression by using DASS-21 (Lovibond & Lovibond, 1995) that were comprised of three subscales; DASS-D, DASS-A, and DASS-S for measuring depression, anxiety, and stress respectively. Each subscale consists of seven items on a scale. In the original validation study, DASS-21 indicated good internal consistency in which the Cronbach alpha was .88, .82, .90, and .93 for depression, anxiety, stress, and overall scale respectively (Lovibond & Lovibond, 1995). In this study, the Cronbach's alpha was .78, .74, .76, and .89 for depression, anxiety, stress, and overall scale respectively. Although there was a variation in participants' scores, most participants reported the relatively high level of campus connectedness and perceived social support. The descriptive statistics for predictor variables campus connectedness and perceived social support are listed in Table 7.

Table 7

Descriptive Statistics for Campus Connectedness and Perceived Social Support

Scale	*N*	Items	Range of test scores		*M*	*SD*	α
			Potential	Observed			
CCS	680	14	14-84	24-84	62.42	9.79	.786
MSPSS	680	12	12-84	17-84	68.96	11.27	.882

Note. CCS= Campus Connectedness Scale, MSPSS= Multidimensional Scale for Perceived Social Support

The predictor variable coping measured by BCI revealed that participants used problem-focused coping strategies during stress. The first three coping strategies used by participants included positive reframing, active coping, and acceptance. Table 8 lists the types of problem-focused and emotion-focused strategies the 680 participants used during stress.

Table 8

Descriptive Statistics for Coping Used by the Students

Coping strategy	Mean	SD
Problem-focused		
Positive reframing	6.21	1.52
Active coping	6.17	2.16
Acceptance	6.13	1.52
Use of instrumental support	5.96	1.47
Planning	5.92	1.41
Emotion-focused		
Self-distraction	5.98	1.49
Use of emotional support	5.74	1.49

Religion	4.97	1.70
Venting	4.83	1.60
Denial	4.32	1.65
Behavioral disengagement	4.10	1.70
Self-blame	4.02	1.62
Humor	3.55	1.67
Substance use	2.21	.73

The operationalization of the outcome variables stress, anxiety, and depression indicated that the participants had moderate to extremely severe levels of depression (51.7%, *n* = 350), anxiety (72.9%, *n* = 496), and stress (47%, *n* = 319) at the time of data collection. The levels of stress, anxiety, and depression are listed in Table 9.

Table 9

Descriptive Statistics for Stress, Anxiety, and Depression Using DASS-21

Severity	Depression		Anxiety		Stress	
	f	Percent of sample	f	Percent of sample	f	Percent of sample
Normal D= 0-9 A=0-7 S=0-14	208	30.6	127	18.7	168	24.7
Mild D= 10-13 A= 8-9 S= 15-18	122	17.9	57	8.4	193	28.4
Moderate D= 14-20 A= 10-14 S= 19-25	190	27.9	171	25.1	148	21.8

Severe D= 21-27 A= 15-19 S= 26-33	73	10.7	106	15.6	133	19.6
Extremely Severe D= 28+ A= 20+ S= 34+	87	12.8	219	32.2	38	5.6

Note. D= Depression, A= Anxiety, S= Stress.

Statistical Assumptions for Multivariate Analysis of Variance (MANOVA)

I selected parametric one-way MANOVA test to answer the research questions in this study. MANOVA is designed to test the relationship of several outcome variables simultaneously with predictor variables (Field, 2014). In a one-way MANOVA, the predictor variable, also known as a factor, has two or more levels (Green & Salkind, 2014). I did not use multiple regression test to examine the relationship between the variables as the assumptions of multiple regression were not met. In this study, each research question aimed to determine the relationship between three outcome variables (stress, anxiety, and depression) and a predictor variable (campus connectedness/perceived social support/coping) each having two groups or levels (low and high). I tested the assumptions underlying one-way MANOVA with the following results:

Assumption 1. There should be two or more outcome variables at the continuous level. In this study, the three outcome variables stress, anxiety, and depression were at the continuous level, which met the assumption for outcome variables.

Assumption 2. There should be one predictor variable that consists of two or more Categorical Independent Groups**.** This assumption was also met in this study. The three predictor variables campus connectedness, perceived social support, and coping had two groups (low and high).

Assumption 3. There should be independence of observation**.** In this study, each group had different participants. The independence assumption was not violated.

Assumption 4. There should be no univariate or multivariate outliers**.** in this study, surveys with a fixed range of possibilities (minimum to maximum) were used. Therefore, the participants all resulted within the range of measurement scales. The outliers shown in the boxplots (figures 1 to 4) indicate extreme responses of the participants that were within the range. Due to this reason, I did not remove any data points from the analysis. There were no multivariate outliers in the data as assessed by Mahalanobis Distance (MD). The critical value for MD for three outcome variables is 16.27 (Meyers, Gamst, & Guarino, 2006). In this study, the extreme value for MD was 14.96.

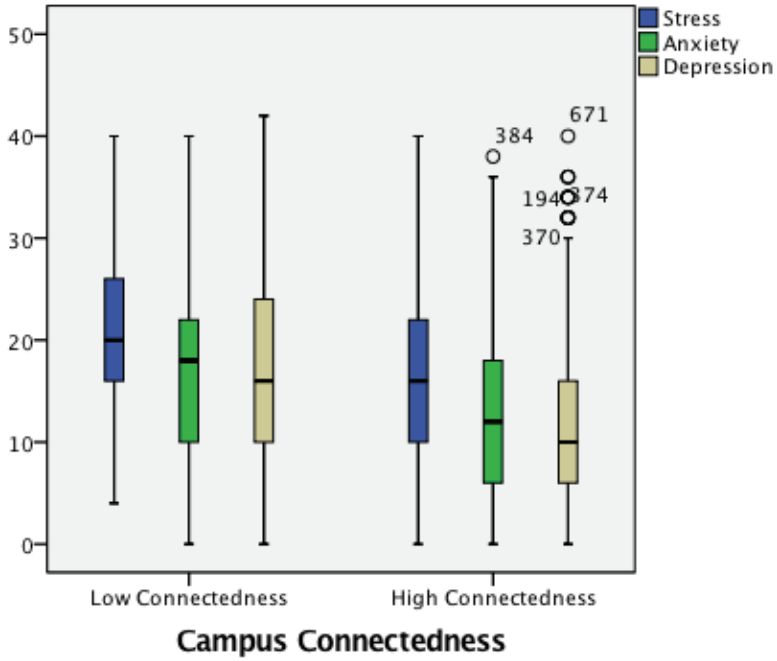

Figure 1. Boxplot for campus connectedness

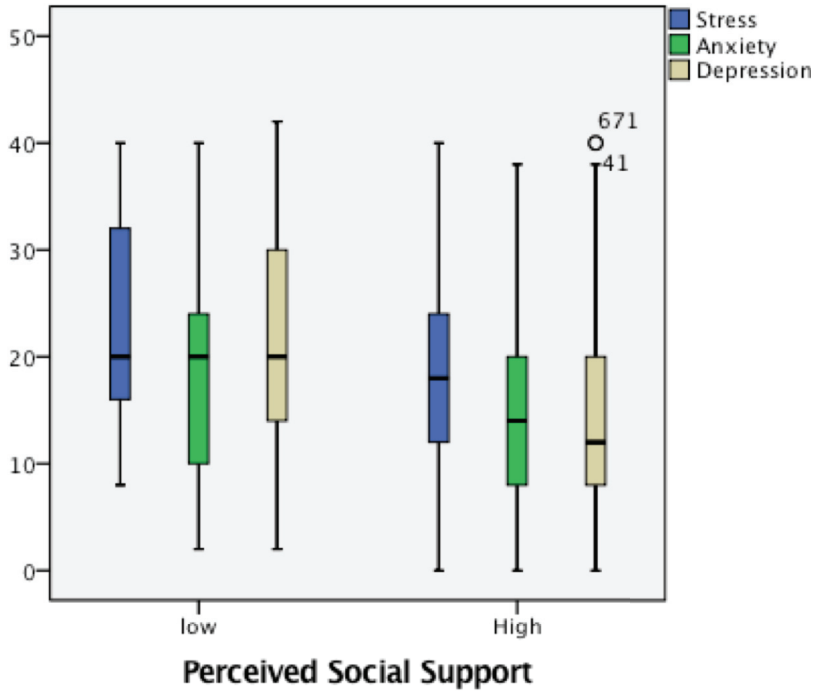

Figure 2. Boxplot for perceived social support.

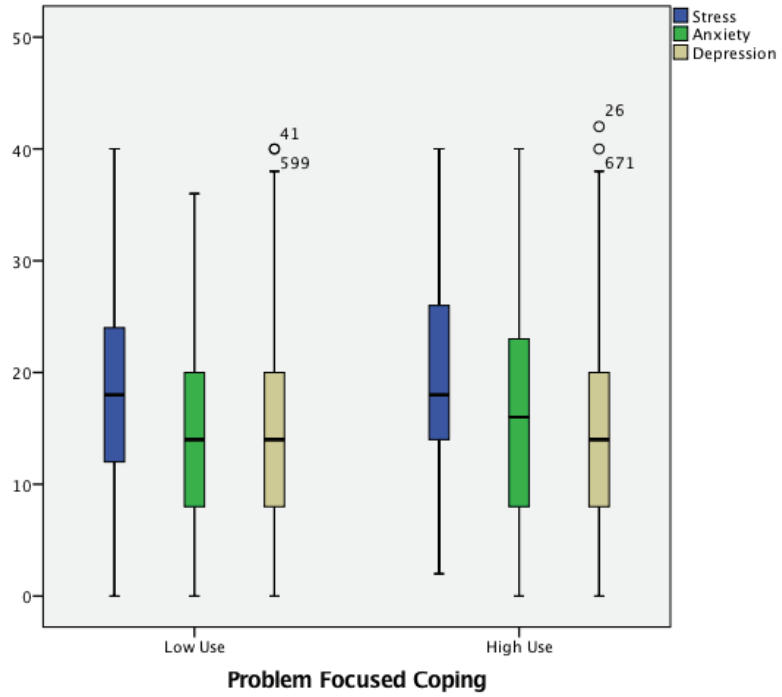

Figure 3. Boxplot for problem-focused coping.

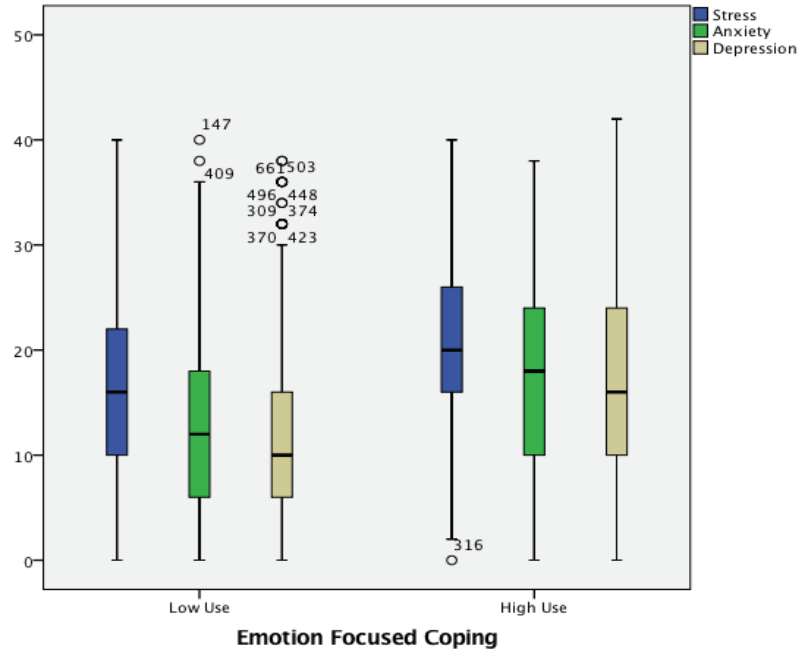

Figure 4. Boxplot for emotion-focused coping.

Assumption 5. There should be multivariate normality**.** I conducted the Shapiro Wilk test to test the normality. The *p* value for both low and high campus connectedness with stress, high perceived social support, high use of emotion-focused coping, and low and high use of problem-focused coping with stress, anxiety, and depression were statistically significant ($p<.05$). The significant Shapiro-Wilk test indicated violation of the assumption of normality. However, in a large sample size, violation of normality can be overlooked (Field, 2014; Norusis, 2012). If sample size is greater than 50, using Normal Q-Q Plot for normality is preferable (Laerd Statistics, 2015). In this study, the sample size was 680 and normal Q-Q Plots (Figures 5 to 28) indicated that assumption of normality was met.

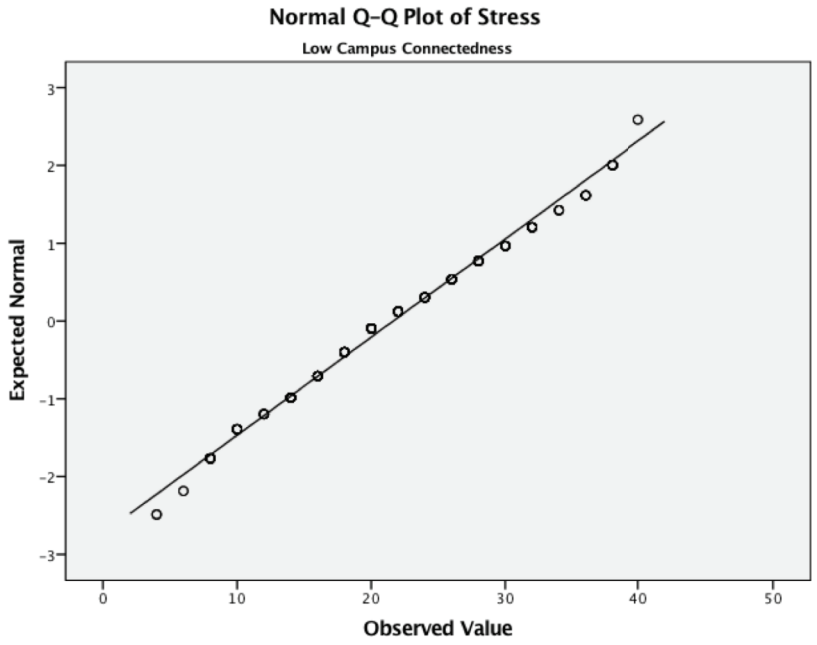

Figure 5. Normal Q-Q plot of stress for low campus connectedness.

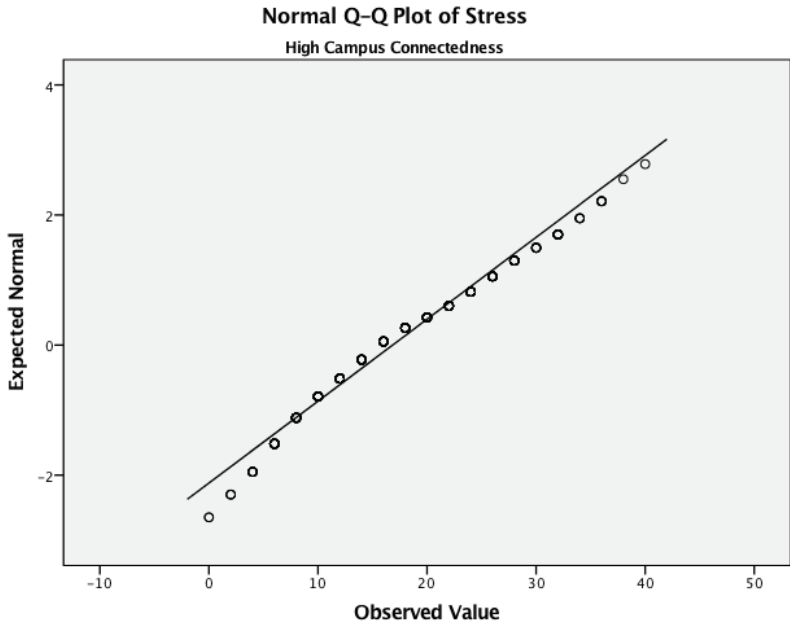

Figure 6. Normal Q-Q plot of stress for high campus connectedness.

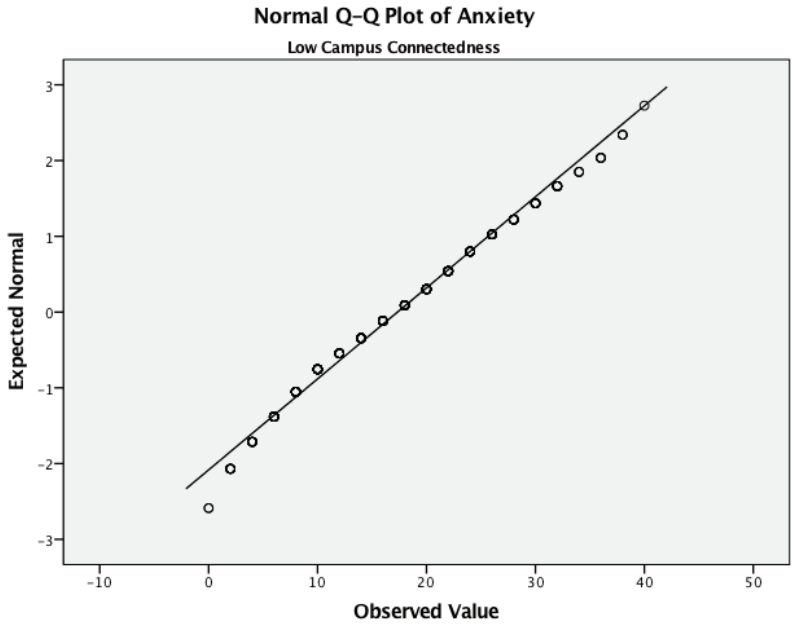

Figure 7. Normal Q-Q plot of anxiety for low campus connectedness.

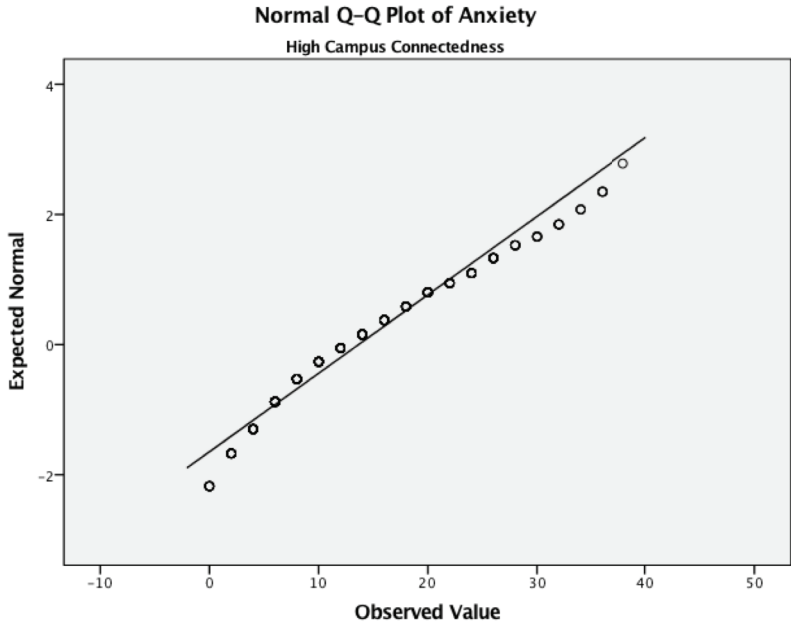

Figure 8. Normal Q-Q plot of anxiety for high campus connectedness.

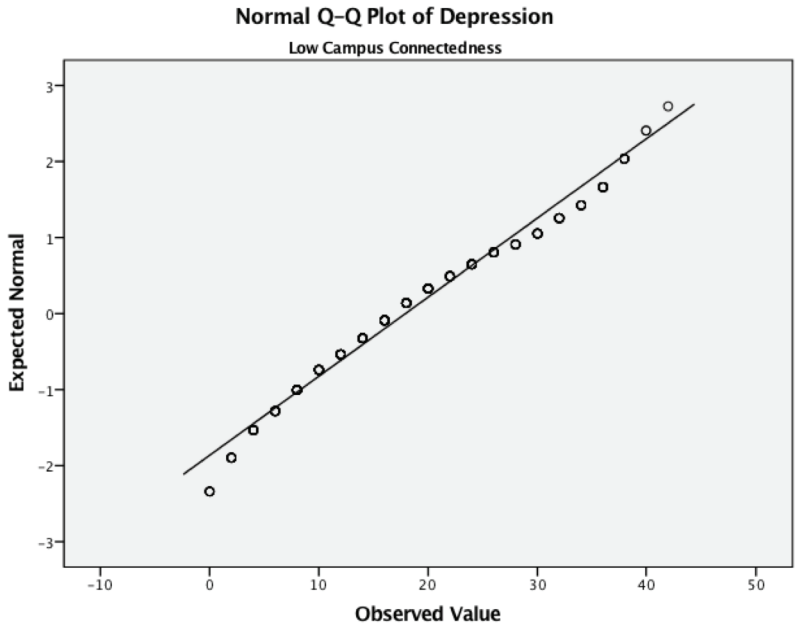

Figure 9. Normal Q-Q plot of depression for low campus connectedness.

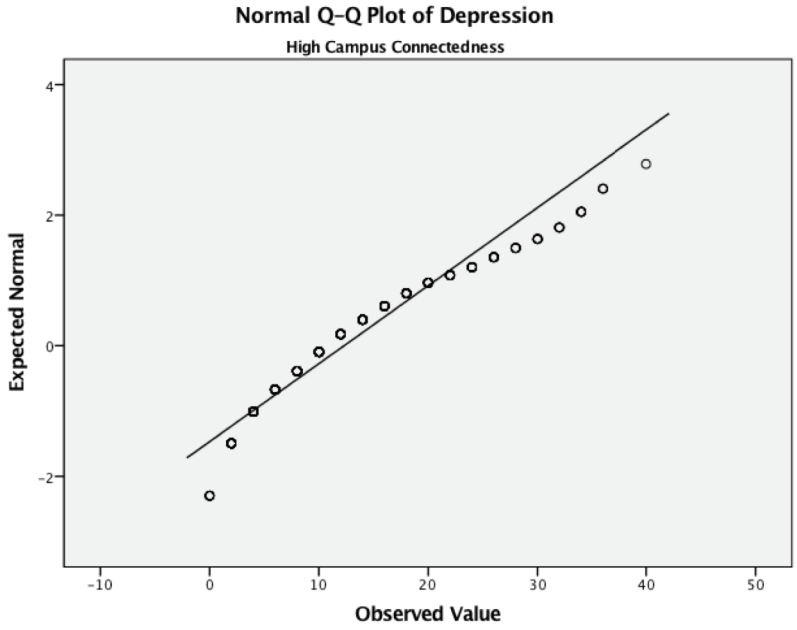

Figure 10. Normal Q-Q plot of depression for high campus connectedness.

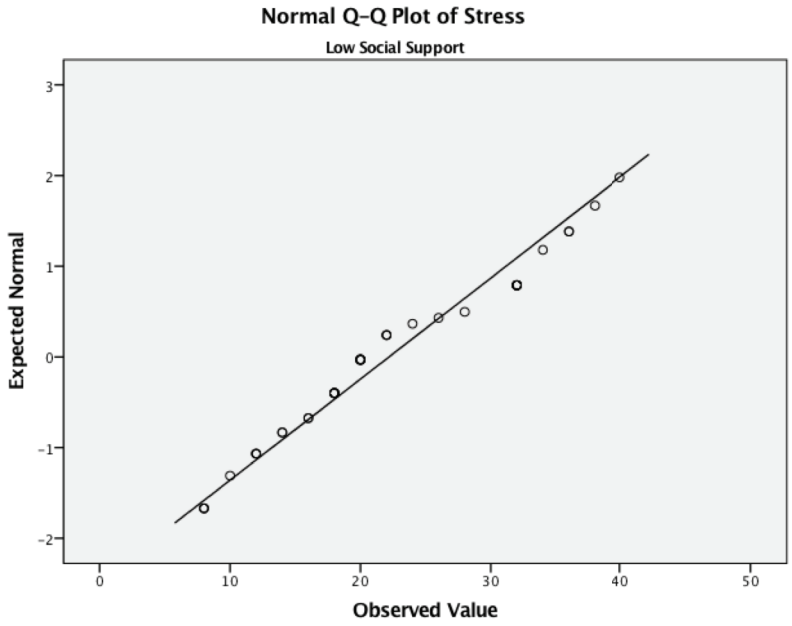

Figure 11. Normal Q-Q plot of stress for low perceived social support.

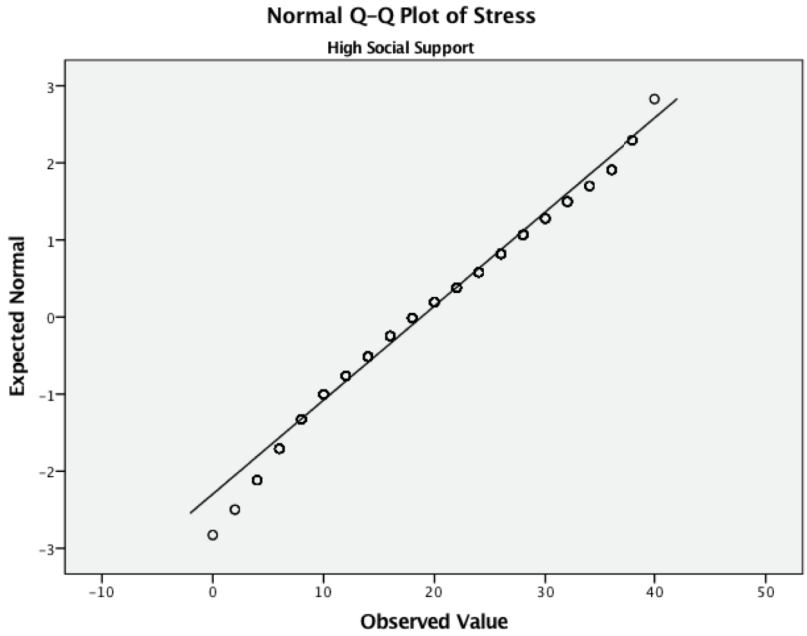

Figure 12. Normal Q-Q plot of stress for high perceived social support.

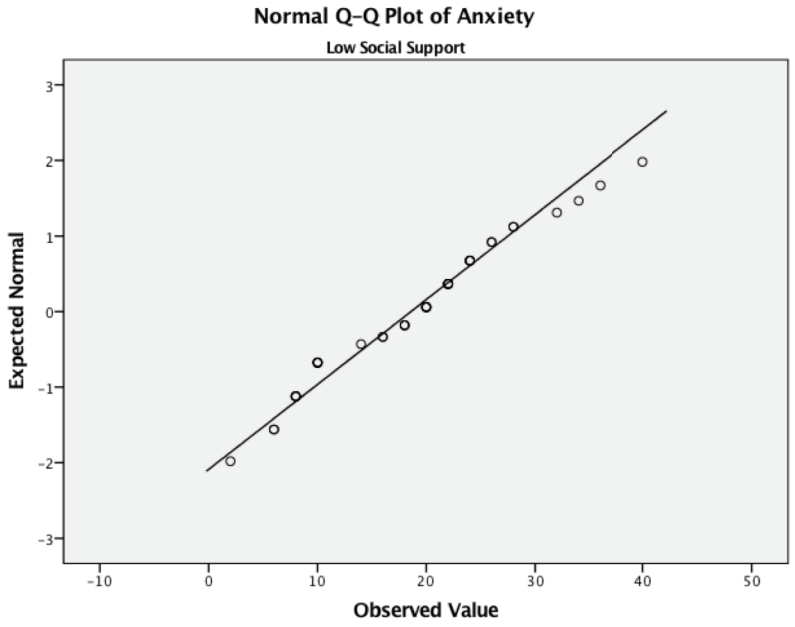

Figure 13. Normal Q-Q plot of anxiety for low perceived social support.

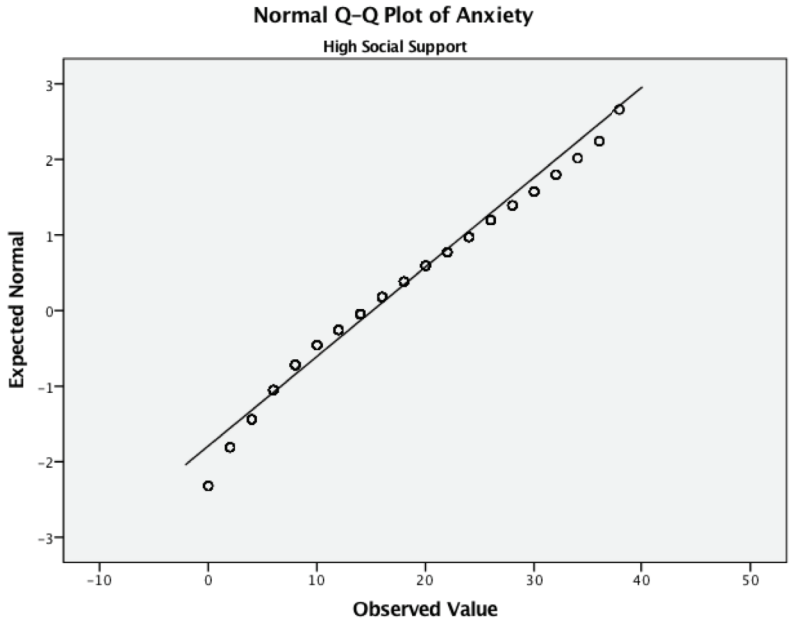

Figure 14. Normal Q-Q plot of anxiety for high perceived social support.

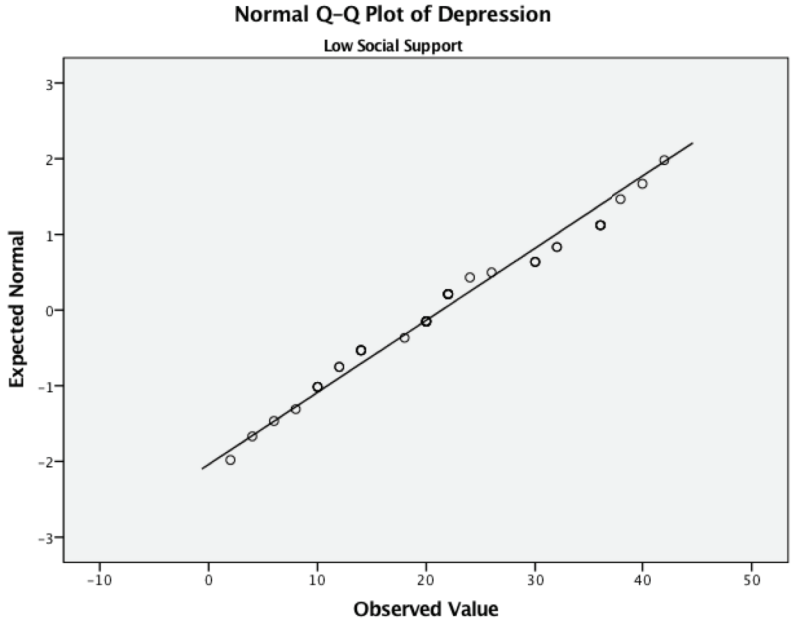

Figure 15. Normal Q-Q plot of depression for low perceived social support.

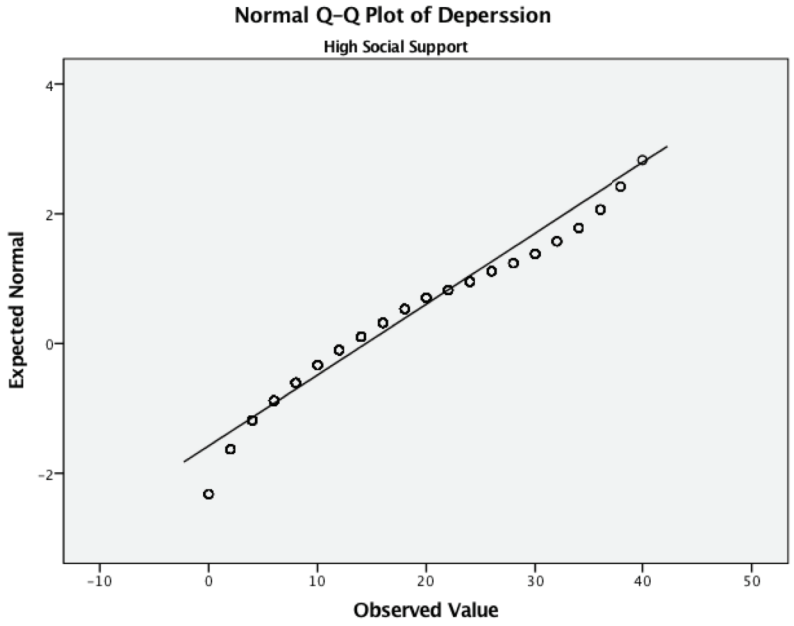

Figure 16. Normal Q-Q plot of depression for high perceived social support.

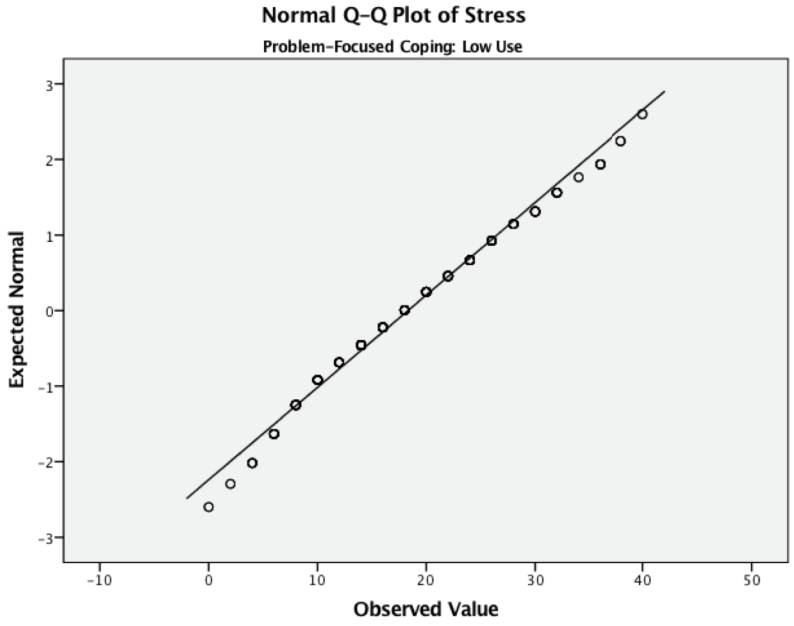

Figure 17. Normal Q-Q plot of stress for low use problem-focused coping.

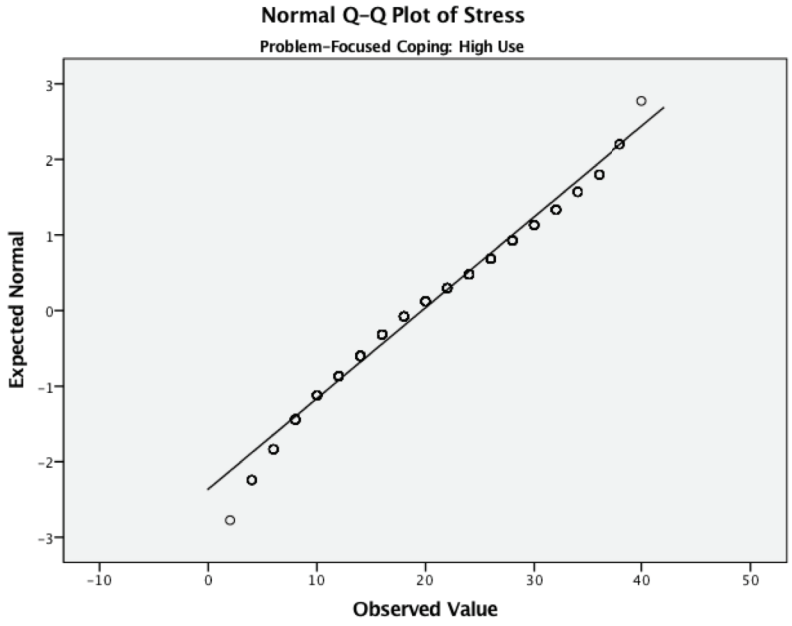

Figure 18. Normal Q-Q plot of stress for high use problem-focused coping.

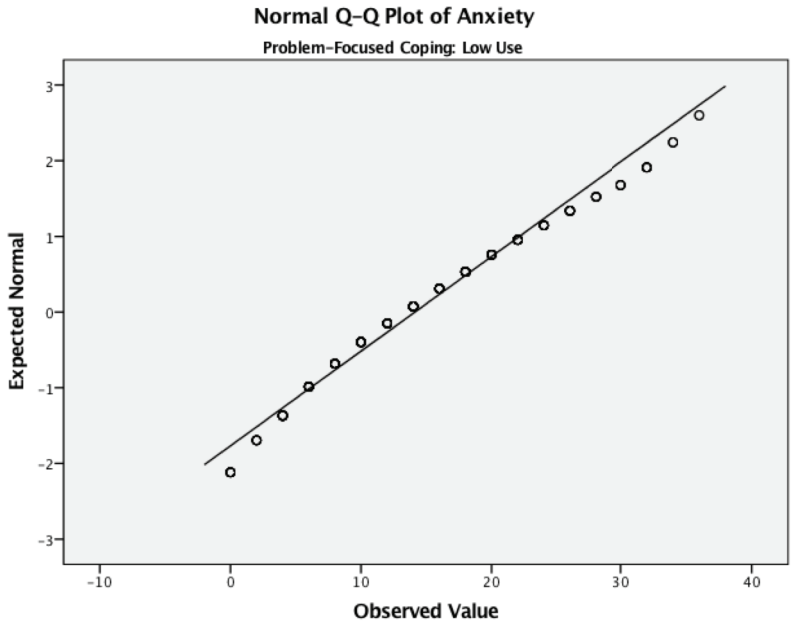

Figure 19. Normal Q-Q plot of anxiety for low use problem-focused coping.

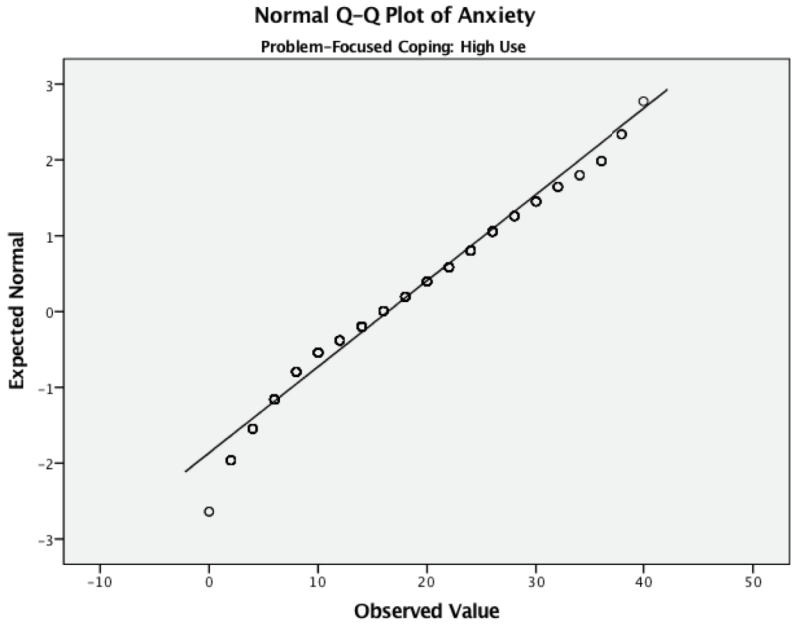

Figure 20. Normal Q-Q plot of anxiety for high use problem-focused coping.

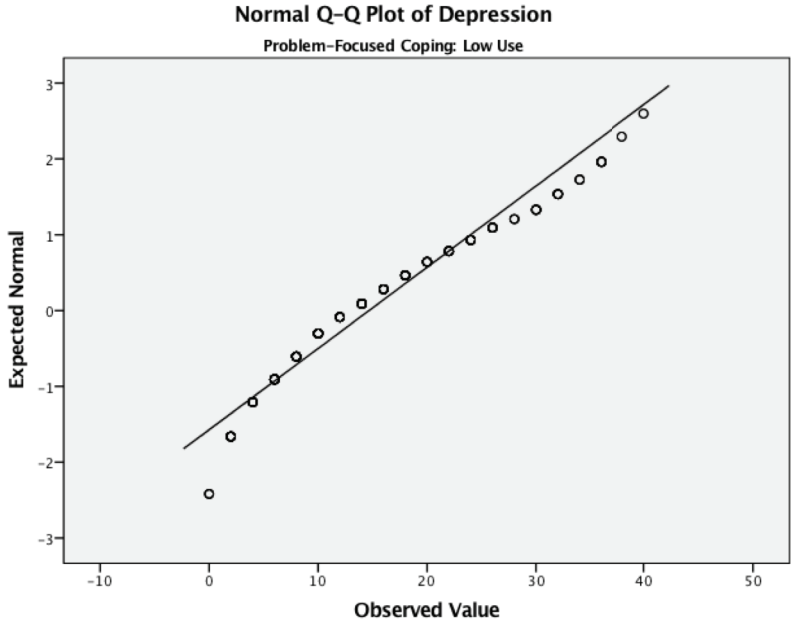

Figure 21. Normal Q-Q plot of depression for low use problem-focused coping.

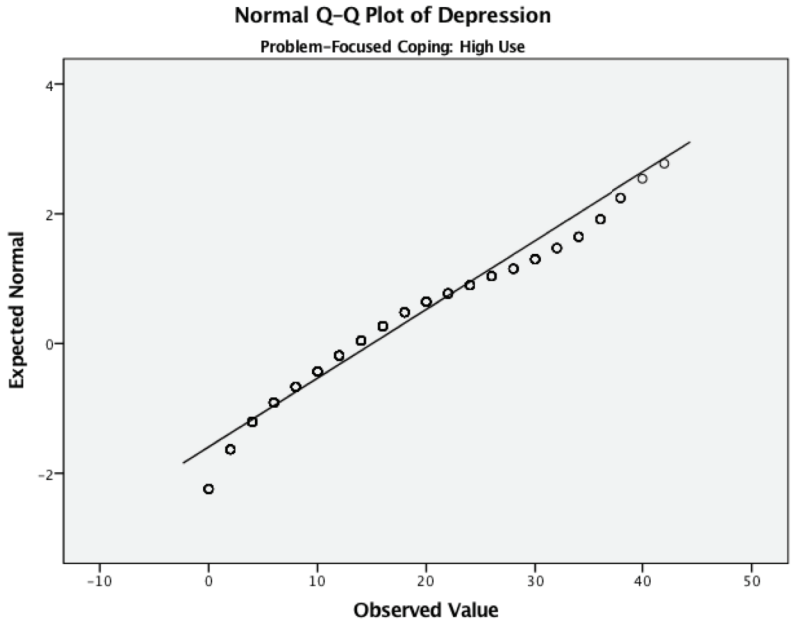

Figure 22. Normal Q-Q plot of depression for high use problem-focused coping.

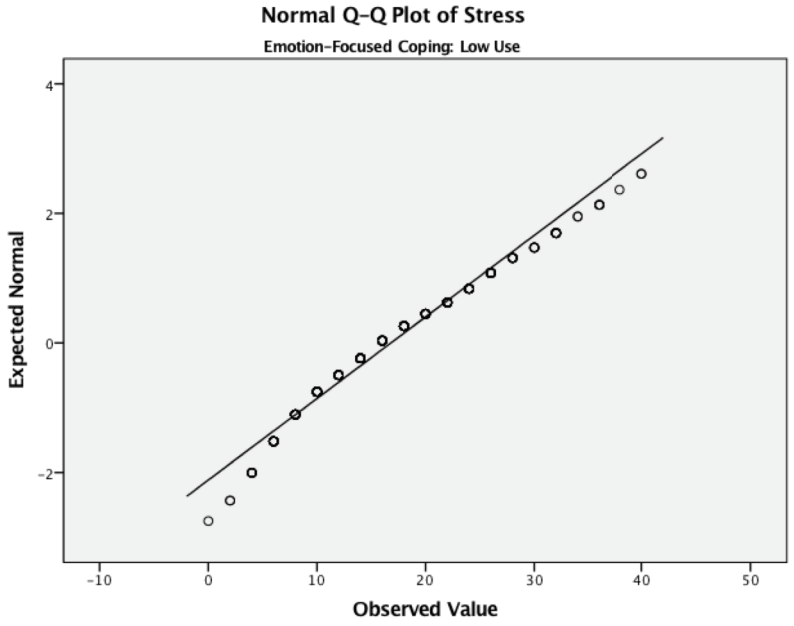

Figure 23. Normal Q-Q plot of stress for low use emotion-focused coping.

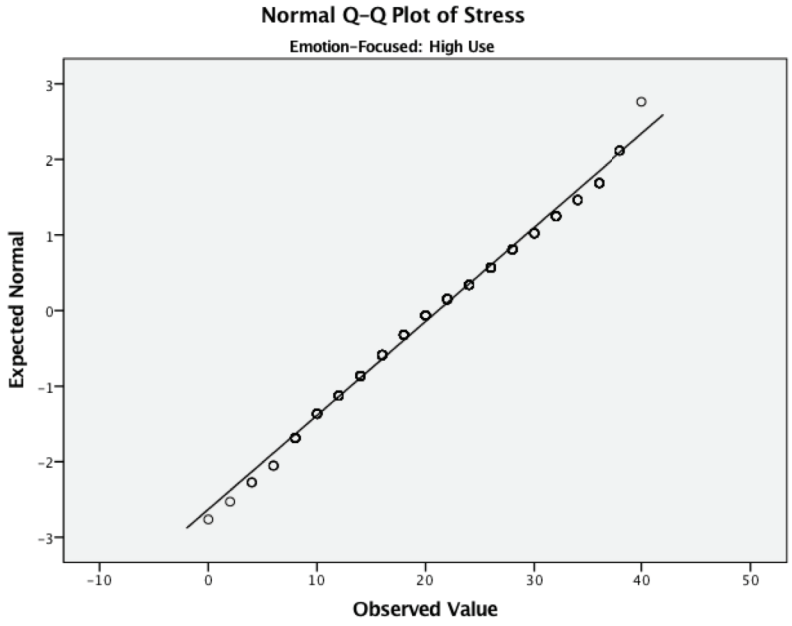

Figure 24. Normal Q-Q plot of stress for high use emotion-focused coping.

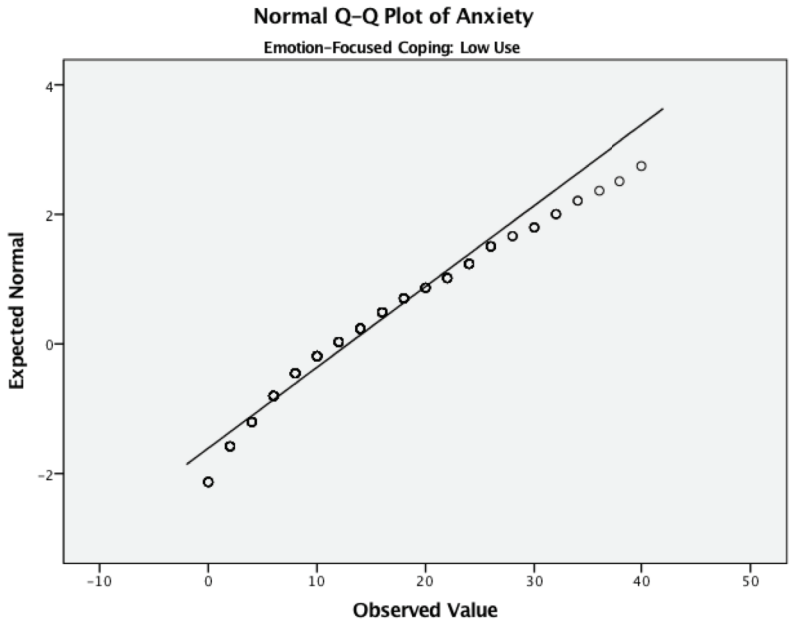

Figure 25. Normal Q-Q plot of anxiety for low use emotion-focused coping.

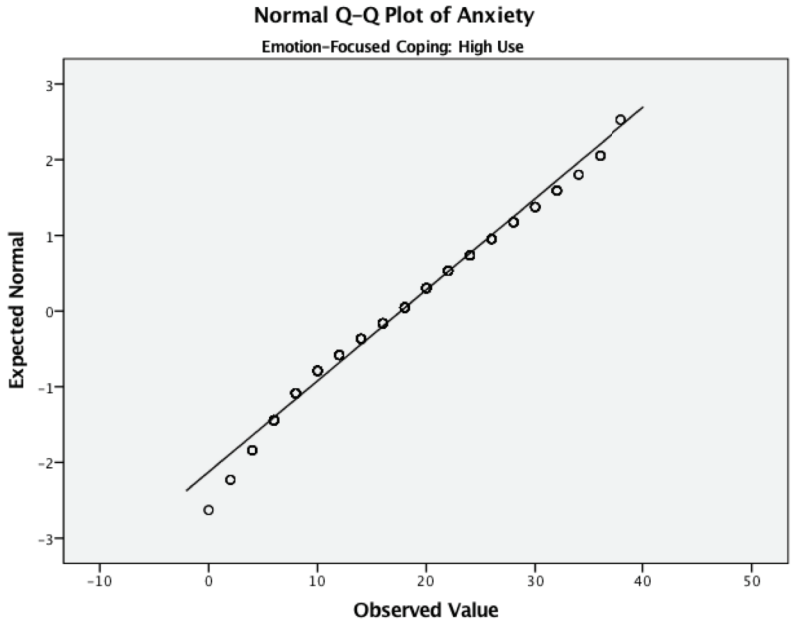

Figure 26. Normal Q-Q plot of anxiety for high use emotion-focused coping.

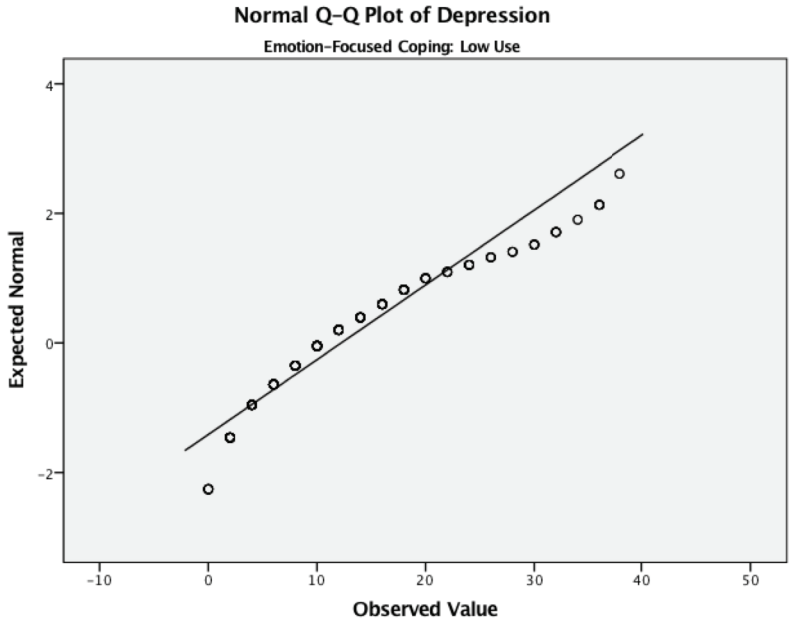

Figure 27. Normal Q-Q plot of depression for low use emotion-focused coping.

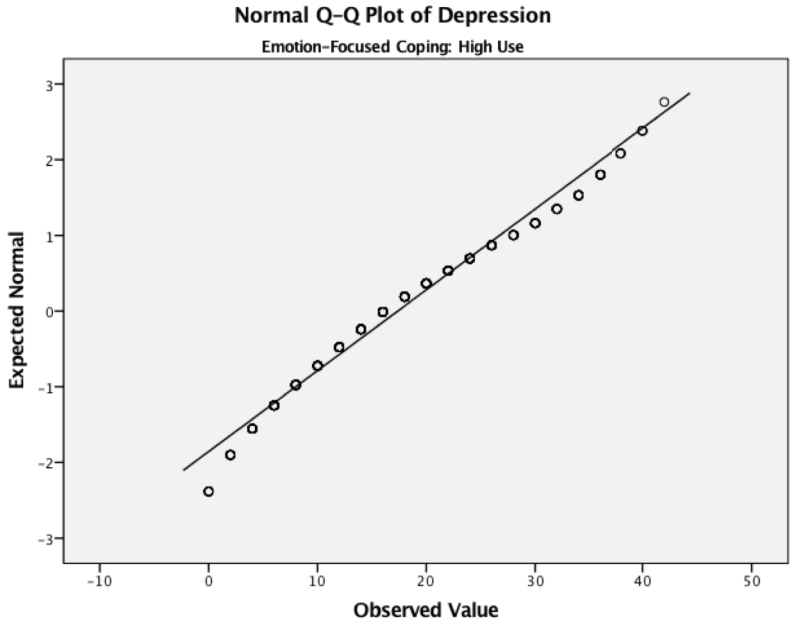

Figure 28. Normal Q-Q plot of depression for high use emotion-focused coping.

Assumption 6. There should be absence of multicollinearity**.** I checked for multicollinearity using Pearson's correlation coefficients between the outcome variables. The r values for stress, anxiety, and depression were .69, .63, and .76 respectively (Table 10) indicating that there is no multicollinearity. The values of .8 or .9 are suggestive of multicollinearity (Pallant, 2016).

Table 10

Pearson's Correlation Coefficients for Outcome Variables

		Stress	Anxiety	Depression
Stress	Pearson Correlation	1	.691**	.761**
	Sig. (2-tailed)		.000	.000
	N	680	680	680
Anxiety	Pearson Correlation	.691**	1	.633**
	Sig. (2-tailed)	.000		.000
	N	680	680	680
Depression	Pearson Correlation	.761**	.633**	1
	Sig. (2-tailed)	.000	.000	
	N	680	680	680

**. Correlation is significant at the 0.01 level (2-tailed).

Assumption 7. Testing the assumption of linearity**.** The scatterplot matrix indicates that there was a linear relationship between each pair of outcome variables for both low and campus connectedness groups (Figures 29 & 30), low and high perceived social support groups (Figures 31 & 32), low use and high use problem-focused coping groups (Figures 33 & 34), and low use and high use emotion-focused coping groups. (Figures 35 & 36).

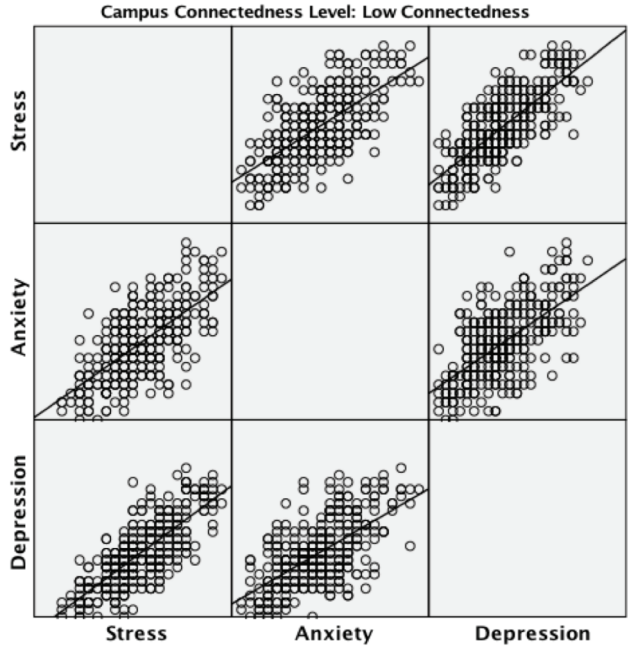

Figure 29. Scatterplot matrix for low campus connectedness.

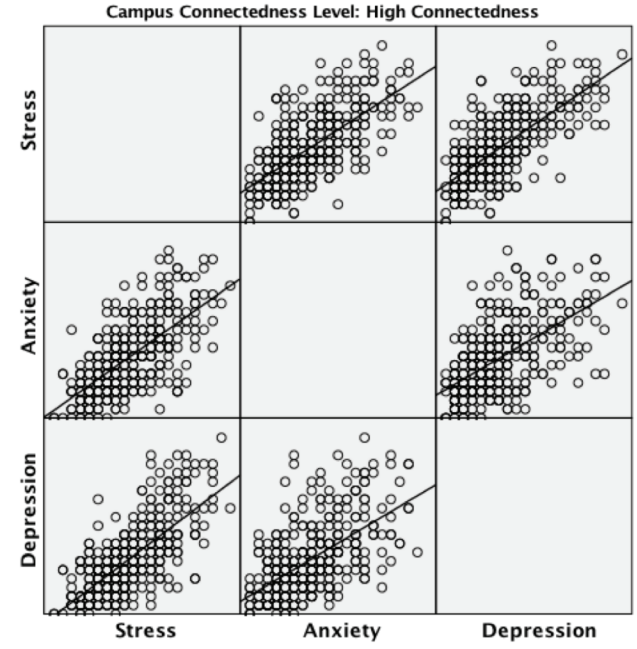

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Figure 30. Scatterplot matrix for high campus connectedness.

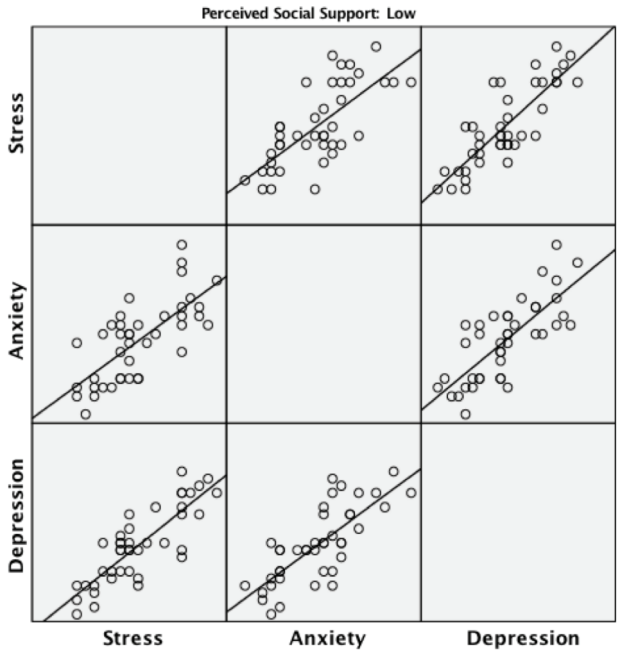

Figure 31. Scatterplot matrix of low perceived social support.

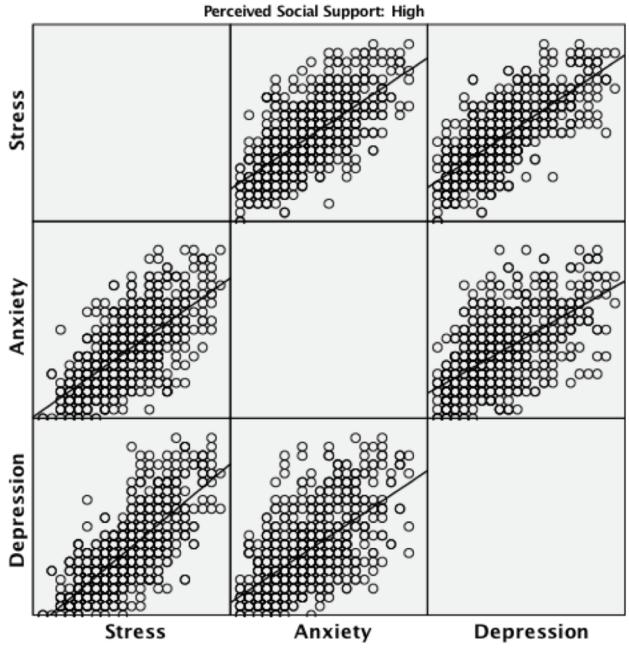

Figure 32. Scatterplot matrix of high perceived social support.

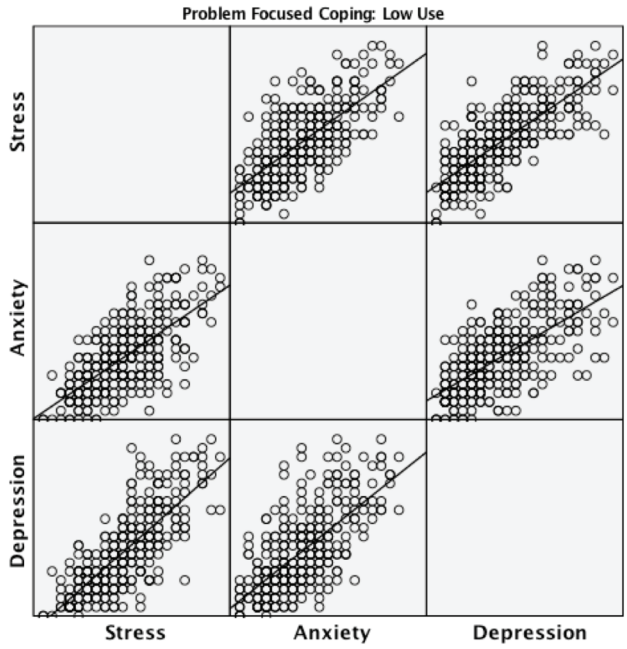

Figure 33. Scatterplot matrix of low use problem-focused coping.

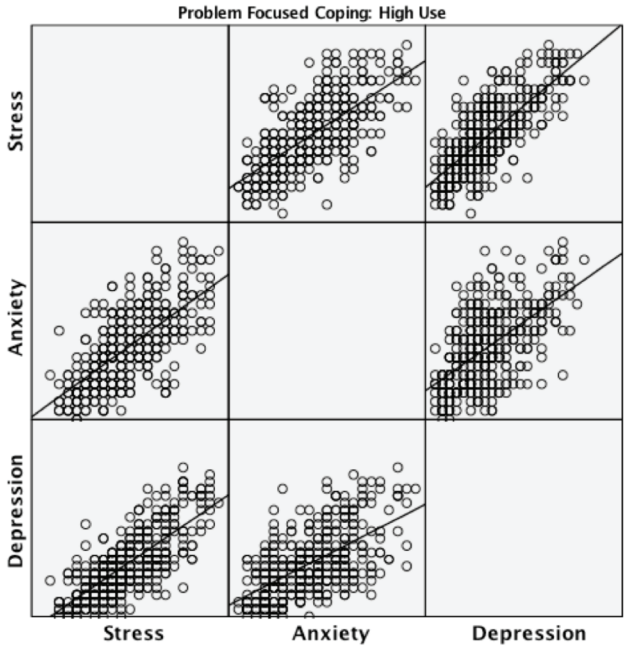

Figure 34. Scatterplot matrix of high use problem-focused coping.

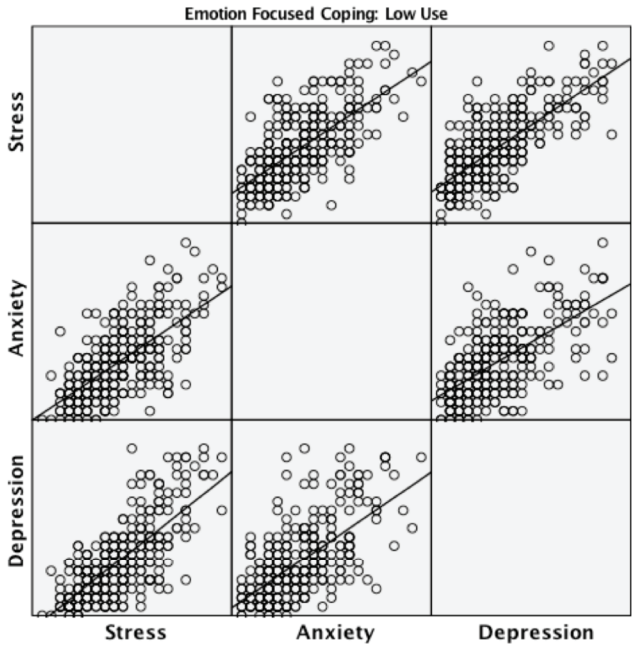

Figure 35. Scatterplot matrix of low emotion-focused coping.

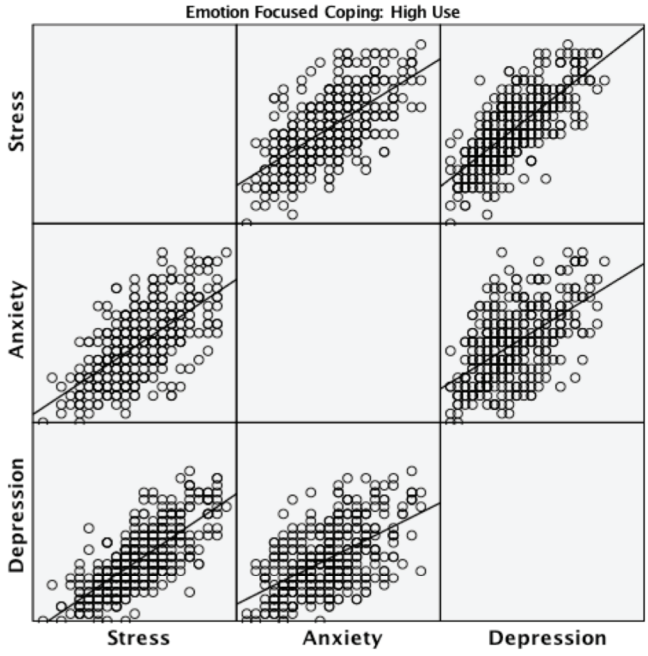

Figure 36. Scatterplot matrix of high use emotion-focused coping.

Assumption 8. There should be homogeneity of variance. A non-significant Levene Static indicated that there was homogeneity of variance for stress and anxiety across the levels of campus connectedness and emotion-focused coping. The assumption of homogeneity of variance was violated for stress, anxiety, and depression across the levels of perceived social support and problem-focused coping. This assumption was also violated for depression across the levels of campus connectedness and emotion-focused coping (Table 11). However, the F-test is robust and violence of homogeneity of variance has minimal effect on the results (Howell, 2004; Stevens, 2009).

Table 11

Levene's Test for Homogeneity of Variance for the levels of Predictor Variables

		F	df1	df2	Sig.
CC	Stress	.025	1	678	.875
	Anxiety	.059	1	678	.808
	Depression	8.684	1	678	.003
PSS	Stress	.877	1	678	.349
	Anxiety	.093	1	678	.760
	Depression	1.274	1	678	.259
PFC	Stress	.627	1	678	.429
	Anxiety	5.542	1	678	.019
	Depression	.015	1	678	.902
EFC	Stress	.088	1	678	.767
	Anxiety	.592	1	678	.442
	Depression	4.367	1	678	.037

Note. CC= Campus Connectedness, *PSS*= Perceived Social Support, *PFC*=Problem-Focused Coping, *EFC*= Emotion-Focused Coping.

The post-hoc comparison for the variance can be conducted to find out the variance across the levels of predictor variables. The post-hoc test could not be done as it did not meet the criteria of having more than two groups of predictor variables. All three predictor variables had two groups. However, as a follow-up statistical test, discriminant analysis was conducted. Green and Salkind (2014) and Field (2014) recommend conducting discriminant analysis if the F-test for significant MANOVA. Discriminant analysis identified that the groups of campus connectedness, perceived social support, and coping differed as described by interrelated variables such as stress, anxiety, and depression. It also revealed the variable that best distinguished among different groups. The results of discriminant analysis are presented in a later section in this chapter.

Assumption 9. There should be homogeneity of variance-covariance matrices. A non-significant Box M test indicates equal covariance between outcome variable for the levels of predictor variables (Table 12).

Table 12

Box's Test of Equality of Covariance Matrices for Predictor Variables

	CC	PSS	PFC	EFC
Box' M	10.562	4.875	12.593	8.834
F	1.752	.790	2.089	1.465
df1	6	6	6	6
df2	3069517.214	26385.897	3210099.255	3310762.591
Sig.	.105	.577	.051	.186

Note. CC=Campus Connectedness, *PSS*=Perceived Social Support, *PFC*=Problem-Focused Coping, *EFC*=Emotion-Focused Coping.

MANOVA Results

Based on the results of assumptions testing, I decided to conduct one-way MANOVA to address the research questions and in this study. The first research question in this study was: What is the relationship of campus connectedness with levels of stress, anxiety, and depression among nursing students in Nepal?

Table 13 shows the result of a one-way MANOVA that determined the effect of two levels of campus connectedness (low and high) on the three outcome variables, the stress, anxiety, and depression. Statistically significant differences were found among the levels of campus connectedness on the outcome variables, Wilks' lambda (λ) = .90, F (3,676) = 24.56, $p < .001$. Therefore, the null hypothesis that suggested that there would be no relationship of campus connectedness with stress, anxiety, and depression was rejected.

Table 13

Multivariate Test Results for Campus Connectedness

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial eta squared
Intercept	Pillai's Trace	.857	1353.677	3.000	676.000	.000	.857
	Wilks' Lambda	.143	1353.677	3.000	676.000	.000	.857
	Hotelling's Trace	6.007	1353.677	3.000	676.000	.000	.857
	Roy's Largest Root	6.007	1353.677	3.000	676.000	.000	.857
Campus connectedness	Pillai's Trace	.098	24.558	3.000	676.000	.000	.098
	Wilks' Lambda	.902	24.558	3.000	676.000	.000	.098
	Hotelling's Trace	.109	24.558	3.000	676.000	.000	.098
	Roy's Largest Root	.109	24.558	3.000	676.000	.000	.098

The second research question in the study was: What is the relationship of perceived social support with levels of stress, anxiety, and depression among nursing students in Nepal?

Table 14 shows the result of a one-way MANOVA that determined the effect of two levels of perceived social support (low and high) on the three outcome variables, stress, anxiety, and depression. Statistically significant differences were found among the levels of perceived social support on the outcome variables, Wilks' $\lambda = .97$, $F(3,676) = 6.19$, $p < .001$. Therefore, the null hypothesis that suggested that there would be no relationship of perceived social support with stress, anxiety, and depression was rejected.

Table 14

Multivariate Test for Perceived Social Support

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial eta squared
Intercept	Pillai's Trace	.590	324.319	3.000	676.000	.000	.590
	Wilks' Lambda	.410	324.319	3.000	676.000	.000	.590
	Hotelling's Trace	1.439	324.319	3.000	676.000	.000	.590
	Roy's Largest Root	1.439	324.319	3.000	676.000	.000	.590
Perceived social support	Pillai's Trace	.035	8.113	3.000	676.000	.000	.035
	Wilks' Lambda	.965	8.113	3.000	676.000	.000	.035
	Hotelling's Trace	.036	8.113	3.000	676.000	.000	.035
	Roy's Largest Root	.036	8.113	3.000	676.000	.000	.035

The third research question in the study was: What is the relationship of coping with levels of stress, anxiety, and depression among nursing students in Nepal? This question was analyzed separately for problem-focused coping and emotion-focused coping.

Table 15 shows the result of a one-way MANOVA that determined the effect of two levels of problem-focused coping (low use and high use) on the three outcome variables, the stress, anxiety, and depression. Statistically significant differences were found among the levels of problem-focused coping on the outcome variables, Wilks' λ = .96, F (3,676) = 8.11, $p < .001$.

Using Wilks' Lambda, there was a significant effect of levels of emotion-focused coping (low use and high use) on stress, anxiety, and depression, Wilks' λ = .90, F

(3,676) = 23.69, $p < .001$ (Table 16). Therefore, the null hypothesis that suggested that there would be no relationship of coping with stress, anxiety, and depression was rejected.

Table 15

Multivariate Test for Problem-Focused Coping

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial eta squared
Intercept	Pillai's Trace	.846	1239.760	3.000	676.000	.000	.846
	Wilks' Lambda	.154	1239.760	3.000	676.000	.000	.846
	Hotelling's Trace	5.502	1239.760	3.000	676.000	.000	.846
	Roy's Largest Root	5.502	1239.760	3.000	676.000	.000	.846
Problem-focused coping	Pillai's Trace	.027	6.193	3.000	676.000	.000	.027
	Wilks' Lambda	.973	6.193	3.000	676.000	.000	.027
	Hotelling's Trace	.027	6.193	3.000	676.000	.000	.027
	Roy's Largest Root	.027	6.193	3.000	676.000	.000	.027

Table 16

Multivariate Test for Emotion-Focused Coping

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial eta squared
Intercept	Pillai's Trace	.854	1323.095	3.000	676.000	.000	.854
	Wilks' Lambda	.146	1323.095	3.000	676.000	.000	.854
	Hotelling's Trace	5.872	1323.095	3.000	676.000	.000	.854
	Roy's Largest Root	5.872	1323.095	3.000	676.000	.000	.854
Emotion-focused coping	Pillai's Trace	.095	23.668	3.000	676.000	.000	.095
	Wilks' Lambda	.905	23.668	3.000	676.000	.000	.095
	Hotelling's Trace	.105	23.668	3.000	676.000	.000	.095
	Roy's Largest Root	.105	23.668	3.000	676.000	.000	.095

Discriminant Analysis as a Follow-Up Procedure to MANOVA

Discriminant analysis can be used to distinguish groups based on linear combinations of measure as a follow-up procedure to a significant MANOVA (Field, 2014; Green & Salkind, 2014). The advantage of discriminant analysis as a follow-up procedure to MANOVA is that it adequately reflects the character and complexity of multivariate data (Borgen & Seling, 1978). I conducted discriminant analysis as the F-tests for MANOVA in this study were highly significant ($p < .001$) and to further describe the dimension on which the groups in this study actually differs. The variables in discriminant analysis were the reversed form of MANOVA test. The continuous predictor

variables included stress, anxiety, and depression, whereas, the outcome variables used were campus connectedness with two levels (low and high), perceived social support with two levels (low and high), problem-focused coping with two levels (low use and high use), and emotion-focused coping (low use and high use).

I used variables stress, anxiety, depression, and campus connectedness for the discriminant analysis of RQ1 to determine whether stress, anxiety, and depression could predict campus connectedness. The overall Wilks' lambda was significant, $\lambda = .90$ (3, $N = 680$) = 69.98, $p < .001$ indicating that overall the predictors variables, stress, anxiety, and depression differentiated across the two levels of campus connectedness (Table 17). Function 1 had an eigenvalue of .109 and a canonical correlation of .313 (Table 17). By squaring the canonical correlation for the discriminant function ($.313^2 = .09$), I obtained the eta square on the discriminant function. Accordingly, 9% of the variability of the scores for the discriminant function was accounted for by differences among the two campus connectedness groups. The eta square value of .09 indicated a moderate effect size (Richardson, 2011).

Table 17

Significant Tests and Strength-of-Relationship Statistics for Campus Connectedness

Eigenvalues				
Function	Eigenvalue	% of Variance	Cumulative %	Canonical correlation
1	.109[a]	100.0	100.0	.313

1. First 1 canonical discriminant functions were used in the analysis.

Wilks' Lambda				
Test of Function(s)	Wilks' Lambda	Chi-square	df	Sig.
1	.902	69.982	3	.000

The coefficients for the discriminant functions are shown in Table 18. Discriminant function was named by determining which variable is most strongly related to it. The strength of the relationship was assessed by the magnitudes of the standardized coefficients for the predictor variables of functions (Table 18 labeled "Standardized Canonical Discriminant Function Coefficients") and the correlation coefficients between the predictor variables and the functions within the group (Table 18 labeled "Structure Matrix") (Field, 2014; Green & Salkind, 2014).The discriminant function showed a positive relationship with stress and depression and a negative relationship with anxiety. Based on the with-in groups relationship between the predictors, stress, anxiety, depression and the discriminant functions in Structure Matrix (Table 18), depression demonstrated the strongest relationship with the discriminant function. Thus, discriminant function was named as depression.

Table 18

Coefficients for Discriminant Functions and the Pooled With-in Groups Correlations for Campus Connectedness

	Standardized Canonical Discriminant Function Coefficient
	Function 1
Stress	.485
Anxiety	-.026
Depression	.606
Structure Matrix	
	Function 1
Depression	.948
Stress	.914
Anxiety	.669

The means of the discriminant scores for the two groups of low campus connectedness and high campus connectedness are presented in Table 19. The average value for the discriminant function for campus connectedness was 0.36, while for high connectedness was -0.30. This finding indicated a large difference in means using linear combinations of these predictor variables.

Table 19

Group Centroid for Discriminant Function: Campus Connectedness

	Function
Campus connectedness level	1
Low connectedness	.360
High connectedness	-.302

Unstandardized canonical discriminant functions evaluated at group means

The group classification results determined how well the group membership was predicted. Table 20 indicated that overall, 63.2% of the 680 samples used in the analysis were correctly classified in their original groups based on the discriminant functions. The findings suggested that 68.1% *(n* = 252) of the 370 participants with high campus connectedness were correctly classified and 57.4% (*n* = 178) of the participants with low campus connectedness were correctly classified.

Table 20

Group Classification: Campus Connectedness

Classification Results[a]

			Predicted Group Membership		
	Campus connectedness		Low	High	Total
Original	Low	Count	178	132	310
		%	57.4	42.6	100
	High	Count	118	252	370
		%	31.9	68.1	100

1. 63.2% of original grouped cases correctly classified

I conducted discriminant analysis for RQ2 to determine whether stress, anxiety, and depression could predict perceived social support. The overall Wilks' lambda was significant, $\lambda = .96$ (3, $N = 680$) = 23.93, $p < .001$ indicating that overall the predictors variables, stress, anxiety, and depression differentiated across the two levels of perceived social support (Table 21). Function 1 had an eigenvalue of .07 and a canonical correlation of .186 (Table 21). By squaring the canonical correlation for the discriminant function ($.186^2 = .03$), I obtained the eta square on the discriminant function. Accordingly, 3% of

the variability of the scores for the discriminant function was accounted for by differences among the two campus connectedness groups. The eta square value of .03 indicated a small effect size (Richardson, 2011).

Table 21

Significant Tests and Strengths-of-Relationship Statistics for Perceived Social Support

Eigenvalues				
Function	Eigenvalue	% of Variance	Cumulative %	Canonical Correlation
1	.036[a]	100.0	100.0	.186

2. First 1 canonical discriminant functions were used in the analysis.

Wilks' Lambda				
Test of Function(s)	Wilks' Lambda	Chi-square	df	Sig.
1	.965	23.930	3	.000

Table 22 shows the coefficients for the discriminant function that was named by determining the strongest related variable. The strength of the relationship was assessed by the magnitudes of the standardized coefficients for the predictor variables of functions and the correlation coefficients between the predictor variables and the functions within the group (Field, 2014; Green & Salkind, 2014). The discriminant function showed a positive relationship with anxiety and depression and a negative relationship with stress. Based on the within groups relationship between the predictors, stress, anxiety, depression and the discriminant functions in Structure Matrix (Table 22), depression demonstrated the strongest relationship (.95) with the discriminant function. Like the

previous model with campus connectedness, the discriminant function was named as depression.

Table 22

Coefficients for Discriminations and the Pooled-With-in-Groups Correlations for Perceived Social Support

	Standardized Canonical Discriminant Function Coefficient
	Function 1
Stress	-.509
Anxiety	.041
Depression	1.308
Structure Matrix	
	Function 1
Depression	.948
Anxiety	.514
Stress	.513

The means of the discriminant scores for the two groups of low perceived social support and high perceived social support are presented in Table 23. The average value for the discriminant function for perceived social support was .75, while for low perceived social support, it was -.05. This indicated a large difference in means using linear combinations of these predictor variables

Table 23

Group-Centroid for Discriminant Function Perceived Social Support

	Function
Perceived social support	1
Low	.748
High	-.048

Unstandardized canonical discriminant functions evaluated at group means

Table 24 indicated that overall, 69.6% of the 680 samples used in the analysis were correctly classified in their original groups based on the discriminant functions. The findings suggested that 70.1% (n = 448) of the 639 participants with high social support were correctly classified and 61% (n = 25) of the participants with low social support were correctly classified

Table 24

Group Classification: Perceived Social Support

Classification Results[a]

			Predicted Group Membership		
	Perceived social support		Low	High	Total
Original	Low	Count	25	16	41
		%	61	39	100
	High	Count	191	448	639
		%	29.9	70.1	100

1. 69.6% of original grouped cases correctly classified

A separate discriminant analysis for RQ3 was conducted to determine whether stress, anxiety, and depression could predict problem- focused coping and emotion-focused coping. The overall Wilks' lambda was significant, $\lambda = .97$ (3, $N = 680$) = 18.34, $p < .001$ indicating that overall the predictors variables, stress, anxiety, and depression differentiated across the two levels of problem-focused coping (Table 25). Function 1 had an eigenvalue of .03 and a canonical correlation of .164 (Table 25). By squaring the canonical correlation for the discriminant function ($.164^2 = .03$), I obtained the eta square on the discriminant function. Accordingly, 3% of the variability of the scores for the discriminant function was accounted for by differences among the two problem-focused groups. The eta square value of .03 indicated a small effect size (Richardson, 2011).

Table 25

Significant Tests and Strengths-of-Relationship Statistics for Problem-Focused Coping

Eigenvalues				
Function	Eigenvalue	% of Variance	Cumulative %	Canonical Correlation
1	.027[a]	100.0	100.0	.164

1. First 1 canonical discriminant functions were used in the analysis.

Wilks' Lambda				
Test of Function(s)	Wilks' Lambda	Chi-square	df	Sig.
1	.973	18.343	3	.000

Discriminant function was named by determining which variable was most strongly related to it. The strength of the relationship was assessed by the magnitudes of the standardized coefficients for the predictor variables of functions and the correlation

coefficients between the predictor variables and the functions within the group (Table 26). Discriminant function showed a positive relationship with stress and anxiety and a negative relationship with anxiety. Based on the with-in groups relationship between the predictors, stress, anxiety, depression and the discriminant functions in Structure Matrix (Table 26), anxiety demonstrated the strongest relationship with the discriminant function

Table 26

Coefficients for Discriminant Functions and the Pooled With-in-Groups Correlations for Problem-Focused Coping

	Standardized Canonical Discriminant Function Coefficient
	Function 1
Stress	.436
Anxiety	1.094
Depression	-.909
Structure Matrix	
	Function 1
Anxiety	.815
Stress	.496
Depression	.119

The means of the discriminant scores for the two groups of low use problem-focused coping and high use problem-focused coping are presented in Table 27. The average value for the discriminant function for problem focused coping was -.18, while for high use problem-focused coping, it was .16. This indicated a large difference in means using linear combinations of these predictor variables.

Table 27

Group-Centroid for Discriminant Function: Problem-Focused Coping

	Function
Problem-focused coping	1
Low use	-.176
High use	.156

Unstandardized canonical discriminant functions evaluated at group means

The overall, 55.0% of the 680 samples used in the analysis were correctly classified in their original groups based on the discriminant functions (Table 28). The findings suggested that 52.8% (n = 190) of the 360 participants with high use problem-focused coping were correctly classified and 57.5% (n = 184) of the participants with low use problem-focused coping were correctly classified.

Table 28

Group Classification: Problem-Focused Coping

Classification Results[a]

			Predicted Group Membership		
	Problem-focused coping		Low use	High use	Total
Original	Low use	Count	184	136	320
		%	57.5	42.5	100
	High use	Count	170	190	360
		%	47.2	52.8	100

1. 55.0% of original grouped cases correctly classified

As a part of RQ3, a discriminant analysis was conducted to determine whether stress, anxiety, and depression could predict emotion- focused coping. The overall Wilks' lambda was significant, $\lambda = .90$ (3, $N = 680$) = 67.57, $p < .001$ indicating that overall the predictors variables, stress, anxiety, and depression differentiated across the two levels of emotion-focused coping (Table 29). Function 1 had an eigenvalue of .10 and a canonical correlation of .308 (Table 29). By squaring the canonical correlation for the discriminant function ($.308^2 = .09$), I obtained the eta square on the discriminant function. Accordingly, 9% of the variability of the scores for the discriminant function was accounted for by differences among the two emotion-focused groups. The eta square value of .09 indicated a moderate effect size (Richardson, 2011).

Table 29

Significant Tests and Strengths-of-Relationship Statistics for Emotion-Focused Coping

Eigenvalues				
Function	Eigenvalue	% of Variance	Cumulative %	Canonical Correlation
1	.105[a]	100.0	100.0	.308

1. First 1 canonical discriminant functions were used in the analysis.

Wilks' Lambda				
Test of Function(s)	Wilks' Lambda	Chi-square	df	Sig.
1	.905	67.567	3	.000

In Table 30, the discriminant function shows a positive coefficient with all three variables; stress, anxiety, and depression. Based on the with-in groups relationship between the predictors, stress, anxiety, depression and the discriminant functions in Structure Matrix (Table 30), anxiety demonstrated the strongest relationship with the

discriminant function. Therefore, the discriminant function for emotion-focused coping was named as anxiety.

Table 30

Coefficients for Discriminant Functions and the Pooled With-in Groups Correlations for Emotion-Focused Coping

	Standardized Canonical Discriminant Function Coefficient
	Function 1
Stress	.158
Anxiety	.530
Depression	.443
Structure Matrix	
	Function 1
Anxiety	.902
Depression	.879
Stress	.840

The means of the discriminant scores for the two groups of low use emotion-focused coping and high use emotion-focused coping are presented in Table 31. The average value for the discriminant function for emotion- focused coping was -.33, while for high use emotion-focused coping, it was .32. This indicated a large difference in means using linear combinations of the predictor variables.

Table 31

Group Centroid for Discriminant Emotion-Focused Coping

	Function
Emotion-focused coping	1
Low use	-.331
High use	.316

Unstandardized canonical discriminant functions evaluated at group means

Overall, 63.2% of the 680 surveys in the sample used in the analysis were correctly classified in their original groups based on the discriminant functions (Table 32). The findings suggested that 60.9% (n = 212) of the 348 participants with high use emotion-focused coping were correctly classified and 65.7% (n = 218) of the 332 of the participants with low use emotion-focused coping were correctly classified.

Table 32

Group Classification: Emotion-Focused Coping

Classification Results[a]

	Emotion-focused coping		Predicted Group Membership: Low use	High use	Total
Original	Low use	Count	218	114	332
		%	65.7	34.3	100
	High use	Count	136	212	348
		%	39.1	60.9	100

Summary

The purpose of this non-experimental, descriptive, correlational study was to determine the relationship of campus connectedness, perceived social support, and coping with stress, anxiety, and depression among nursing students in Nepal. I used three sets of MANOVA as a primary statistical test for addressing the three research questions in this study. The MANOVA tests revealed statistically significant differences across the levels of predictor variables on outcome variables. I conducted discriminant analyses as a follow-up procedure to significant MANOVA. The results of discriminant analyses confirmed statistically significant relationships between the variable across the groups. Overall, the predictors in discriminant analyses differentiated among the two groups of outcome variables. On the basis of MANOVA and discriminant analysis findings, I rejected the null hypotheses formulated in this study. In Chapter 5, I summarize and interpret the key findings, describe the limitations, recommendations, implications for positive social change, and provide recommendations for further research.

Chapter 5: Discussion, Conclusions, and Recommendations

Introduction

My purpose in this nonexperimental, descriptive, correlational study was to determine the relationship of campus connectedness, perceived social support, and coping with levels of stress, anxiety, and depression among nursing students in Nepal. I used cross-sectional, quantitative design to examine the role of campus connectedness, social support, and coping on levels of stress, anxiety, and depression. The study also explored the prevalence of stress, anxiety, and depression among undergraduate nursing students. The predictor variables in the study included campus connectedness, social support, and coping. The outcome variables in this study were stress, anxiety, and depression.

In this study, I addressed a gap in the literature by examining the role of campus connectedness, perceived social support, and coping in the occurrence of stress, anxiety, and depression among nursing students in Nepal. The use of instruments such as DASS-21, CCS, and MSPSS provided baseline information on the study variables among nursing students in Nepal. I made four major findings: (a) high prevalence of stress, anxiety, and depression among nursing students; (b) statistically significant relationship of campus connectedness, perceived social support and coping with stress, anxiety, and depression; (c) relatively good membership between the groups of campus connectedness, perceived social support across stress, anxiety, and depression; and (d) the discriminant analysis demonstrated strongest relationship of depression with campus connectedness and perceived social support, whereas anxiety demonstrated strongest relationship with coping.

Interpretation of the Findings

Prevalence of Stress, Anxiety, and Depression

Prevalence of stress, anxiety, and depression were measured by using DASS-21 that comprises three subscales: DASS-D, DASS-A, DASS-S. The majority of students reported moderate to extremely severe level of anxiety (72%) followed by depression (51%), and stress (47%). The findings of my study concur with Basu et al. (2016) who found that students had moderate to extremely severe levels of anxiety (56.6%), followed by depression (33.3%), and stress (23.26%). In a similar study conducted in Hong Kong, nursing students reported moderate to extremely severe anxiety (39.9%), depression (24.3%), and stress (20%) (Cheung et al., 2016). Rathnayake and Ekanayaka (2016) reported different findings indicating highest prevalence of moderate to extreme level of stress (64%) followed by anxiety (50%) and depression (39%) among nursing students.

The literature reveals that the prevalence of stress, anxiety, and depression is higher in developing countries such as India, Sri Lanka, Republic of China, Saudi Arabia, and Brazil as compared with developed countries (Alfaris et al., 2016; Basu et al., 2016; Chatterjee et al., 2014; Lei et al., 2016; Patil et al., 2016; Rathnayake & Ekanayaka, 2016; Singh & Kohli, 2015; Xu et al., 2014). One of the reasons for such high levels of stress, anxiety, and depression could be the unavailability of counseling services in the nursing colleges (Amr, El-Gilany, El-Moafee, Salama, & Jimenez, 2011; Ratanasiripong et al., 2015; Rathnayake & Ekanayaka, 2016; Stebleton et al., 2014), which can most likely be evidenced through future research. I have discussed the factors causing high levels of stress, anxiety, and depression in Chapter 2. The high levels SAD also indicate

that there might be few other unidentified factors that need to be investigated and addressed. In this study, I examined three factors: campus connectedness, perceived social support, and coping.

Campus Connectedness and SAD

Most participants reported a high level of campus connectedness which concurs with research conducted among students from Australia, United States, and Hong Kong reporting a high level of campus connectedness. Bales et al. (2015) also reported high levels of connectedness in the sample of female university students. The reason for the high level of connectedness could be the familiarity that students have with the campus environment. Contrary to this finding, Lykes and Kemmelmeier (2013) found students from Asian background had lower levels of campus connectedness. Undergraduate students begin learning fundamental nursing skills during their clinical placement and spend most of their time in clinical settings (Honda, Levett-Jones, Stone, & Maguire, 2016). Therefore, it is important that they feel connected with their clinical environment. This study focused on campus connectedness, and thus the interpretation could differ from that of clinical placement connectedness (Ashktorab et al., 2015; Grobecker, 2016; Honda et al., 2016; Levett-Jones et al., 2007). Therefore, clinical placement connectedness should be included in future studies for the students in Nepal.

My study results showed statistically significant relationship between campus connectedness and stress, anxiety, and depression. This result is consistent with the findings from previous research which showed a significant inverse relationship between connectedness and stress (Civitci, 2015; Grobecker, 2016; Stebleton et al., 2014).

Similarly, two different studies (Armstrong & Oomen-Early, 2009; Pidgeon et al., 2014; Stebleton et al., 2014) evidenced a significant relationship between campus connectedness and depression. On the other hand, findings in the study by Eckberg et al. (2017) showed no significant relationship between campus connectedness and depression. Eckberg et al. (2017) suggested that higher level of campus connectedness significantly predicted lower levels of anxiety).

Discriminant analysis was carried out as a follow-up procedure to further describe the dimension on which the groups differed and to create group membership for stress, anxiety, and depression. The findings indicated the prediction was accurate for 63.2% of the originally grouped cases ($p < .05$). Discriminant analysis also examined group correlation between predictors stress, anxiety, depression, discriminant factor, and campus connectedness which demonstrated that depression had the strongest relationship with the discriminant factor. This indicated that depression was the most significant variable to differentiate groups of campus connectedness. Furthermore, the discriminant function showed a positive relationship with stress and depression and a negative relationship with anxiety. There were no studies found with discriminant analysis which could support these findings.

Perceived Social Support and SAD

Most participants in this study perceived high level of social support from family, friends, and significant others which is consistent with the findings reported by Wolf et al. (2015). Ekback et al. (2013) found slightly different scores on MSPSS which were lower than the finding in my study. The MSPSS tool measures support from family,

friends, and significant others. The reason for perceiving relatively a high level of social support could be the collectivistic familial culture in Nepal (Wang & Lau, 2015) related to the obligations they may feel to reciprocate with the same gesture of helping those who have supported them, which in turn may increase their stress level (Mojaverian & Kim, 2013; Shavitt et al., 2016).

The results in this study indicated statistically significant differences across the levels of perceived social support on stress, anxiety, and depression. This finding supports findings from previous studies, in which authors reported a significant correlation between social support, stress and depression (Ramezankhani et al., 2013; Wang et al., 2014; Wolf et al., 2015). Roohafza et al. (2016) found that students who had low levels of social support reported higher levels of anxiety and depression. Similarly, Bukhari and Afzal (2017) and Kugbey, Osei-Boadi, and Atefoe (2015) reported that perceived social support had a negative relationship with stress, anxiety, and depression. Another research suggested that a low level of social support is related to higher levels of depression among nursing students (Brandy et al., 2015).

The results of the discriminant analysis revealed that 69.6% of original grouped cases were predicted correctly. Within the group, correlations demonstrated depression to have the strongest relationship with the discriminant factor. Furthermore, discriminant function showed a positive relationship with anxiety and depression, while stress showed a negative relationship. There are no recent studies that would suggest the discriminant functions of the variables used in this study. A contradictory finding was seen in a study

which indicated that social support did not significantly differentiate the groups of stress and depression (Dumont & Provost, 1999).

Coping and SAD

Based on the theoretical basis of this study, coping was analyzed as problem-focused and emotion-focused (Lazarus & Folkman, 1984). Three most commonly used problem-focused coping strategies in this study were positive reframing, active coping, and acceptance. Self-distraction such as watching T.V., reading, sleeping, or shopping, and religion (such as praying, meditation, and spiritual beliefs) were used as emotion-focused strategies by the students. The other emotion-focused coping strategy that the students used in this study was seeking emotional support. Overall, students were found to prefer problem-focused coping strategies over emotion-focused coping strategies. However, most recent research findings contradicted the findings of this study by reporting that emotion-focused are dominant among nursing students. (Bista, Bhattrai, & Khadka, 2017; Fornes-Vives et al., 2016; Hirsch et al., 2015; Mahat, 1996; Zhao et al., 2015). Amongst emotion-focused strategies, students were found to use distractive coping such as watching TV, movies, physical exercise or a shower, denial of a problem, and avoidance. (Hirsch et al., 2015; Zhao et al., 2015). The emotion-focused strategies can be ineffective ways of dealing with the stressful situation, and by using them, individuals will not succeed in solving the real problem (Hirsch et al., 2015). The longitudinal research findings support the findings of my study by indicating that senior students used more problem-solving coping strategies than emotion-focused coping strategies as they progressed through the course (Chan, So, & Fong, 2009; Fornes-Vives

et al., 2016). This could be due to the guidance from the educators, counselors, or family members. The nursing curriculum also offers problem-solving techniques to the students that may apply to their personal life.

My results showed statistically significant differences across two levels of (low-users and high-users) problem-focused and emotion-focused coping. This finding concurs with the other studies that found the significant coefficient of correlations among coping strategies and stress (Fornes-Vives et al., 2016; Hirsch et al., 2015; Mahmoud et al., 2012; Singh & Kohli, 2015). However, the finding in my study contradicts Yildirim et al. (2017) study which revealed a non-significant relationship between stress and coping. Avoidance strategy, an emotion-focused coping strategy was seen to play a risk factor while active coping, a problem-focused coping, showed as a protective factor in depression and anxiety (Roohafza et al., 2014). The high-users of emotion-focused coping were found to have higher levels of depression and anxiety, whereas, anxiety and depression were not significantly related to problem-focused coping (Mahmoud et al., 2012; Roohafza et al., 2014).

The discriminant function for problem-focused coping indicated a positive relationship with stress and anxiety, whereas, a negative relationship was observed for depression. As for emotion-focused coping, the discriminant function revealed a positive relationship with all three variables, stress, anxiety, and depression. Anxiety demonstrated the strongest relationship with the discriminant function for both problem-focused and emotion-focused coping. In a previous study, discriminant analysis among variables of low and high-level depression and coping strategies found that problem-

focused coping strategies lowered the level of depression. Whereas, in the case of high depression, emotion-focused strategies showed higher discriminant coefficients (Dhillon & Arora, 2017).

Theoretical Findings

The Theory of Stress, Coping, and Adaptation (Lazarus & Folkman, 1984) was the theoretical basis for this study. This theory emphasizes the relationship between person and environment that comprises of social networks and social supports. The demand aroused by perceived stress induces coping. Coping is a dynamic process and the selection of coping strategies can be according to the individuals and the situation they are faced with. Theory of Stress, Coping, and Adaptation emphasizes two types of coping, problem-focused and emotion-focused coping. In the current study, both types of coping strategies were used by the students when they faced the stressful situations. It is also evident that students used more problem-focused coping strategies compared to emotion-focused coping strategies.

Contrary to the assumption of this theory where stress levels are assumed to reduce after using coping strategies, the findings of this study revealed that students experienced moderate to extremely high levels of stress, anxiety, and depression. The reason for this may be due to inappropriate selection and application of problem-focused and emotion-focused strategies to deal with the stressful situation. This concurs with the argument of Lazarus and Folkman (1984) that mismatch or misfit of coping strategies may further increase the levels of stress and anxiety. Chang and Taylor (2013) also argued that neither problem-focused nor emotion-focused coping strategies could be

promoted as solutions or answer to the stressful situations. The nature and the context of the stressors have a powerful influence on the efficacy of coping strategy (Chang & Taylor, 2013; Lazarus & Folkman, 1984). However, identifying the stressors was not within the scope of this study. The other assumption of the Theory of Stress, Coping, and Adaptation is that perceived social support has a relationship with stress. This study also found a significant relationship of social support with stress, anxiety, and depression thus meeting the assumption of the theory.

Limitations of the Study

This study had several limitations relating to study design, sampling technique, data collection method, and the statistical approach. The cross-sectional approach limits data collection at one point in time. The study included nursing students from all the four academic years. The way they perceived stress, anxiety, depression may vary according to their current academic year. Therefore, a longitudinal approach could be better to compare the variance based on the academic year. The nursing students affiliated with one university participated in this study. However, to reduce bias, the participants were recruited from multiple sites that included nine colleges from two different districts. Only the female nursing students, who were enrolled in the colleges located in urban areas, participated in the study. These factors can limit the generalizability of the findings to the nursing students from outside of these two districts, from rural areas, male students, and other universities. The convenience sampling technique used in the selection of the participants can also limit the generalizability.

The other limitation could be the use of self-reported CCS. Although CCS has been tested for its validity and reliability outside Nepal, there were no articles that provided evidence for its use in Nepal. The culture and the self-reported survey approach could have also affected the responses of the participants. However, the Cronbach's test revealed that CCS had a good internal consistency in this study. Also, CCS only measures students' connectedness to their college environment and leaves out the clinical connectedness. Whereas undergraduate nursing students spend long hours in the clinical areas that could affect their levels of stress, anxiety, and depression. The post-hoc test that should be conducted on the predictor variable to compare each group to all other groups (Field, 2014) could not be done in this study. The post-hoc test requires a predictor variable with more than two groups, whereas, in this study, predictor variables had only two groups. This limitation was addressed by conducting discriminant analyses on significant MANOVA.

Recommendations

Recommendations are based on the limitations of the study as already discussed in this chapter. Replicating a similar study with a sample from other universities that include colleges in more districts, from rural areas, and male students can be helpful in identifying the pattern of stress, anxiety, depression, and their predictors. In this study, only three predictors were examined, whereas, the literature reveals several factors related to stress, anxiety, and depression. Future studies can be conducted with many more predictors related to academic, clinical, and personal factors. A longitudinal study may help to determine the difference in the levels of stress, anxiety, and depression over

time. Also, it will assist the educators, managers, and counselors to identify if changes occur in the way students use coping strategies, and the way they perceive connectedness to their campus environment and social support over four academic years. I conducted three sets of discriminant analyses among the variables of stress, anxiety, depression and levels of campus connectedness, perceived social support, and coping which revealed that the variable that best discriminated the levels of campus connectedness and perceived social support was depression. Likewise, the levels of coping were found to be best discriminated by anxiety. There is a lack of studies that have conducted discriminant analyses on the variables of stress, anxiety, depression and level of campus connectedness, perceived social support, and coping. Studies using discriminant analysis are needed to examine if there is a pattern of stress, anxiety, depression that best discriminates the levels of campus connectedness, perceived social support, and coping.

Nursing students reported a high level of stress, anxiety, and depression. A mixed-methods approach could be useful to explore the students' experiences that increase stress levels. Although the majority of the students reported a relatively high level of campus connectedness, it is recommended that other measures can be used in future studies to validate the findings in this study. Nursing students must spend long hours in clinical placement. Therefore, they should feel well connected to the clinical areas as well. I recommend the use of a tool that can measures the clinical connectedness or belongingness that students perceive and its relationship with stress, anxiety, and depression in future studies. A high percentage of students reported moderate to extremely severe levels of stress, anxiety, and depression. The study also revealed a

statistically significant relationship with campus connectedness, perceived social support, and coping. These findings suggest that there is a need for screening, referral, and counseling services in nursing colleges in Nepal to cope with the stress, anxiety, and depression. Lastly, future studies to determine the relationship between the availability of counseling services and stress, anxiety, and depression would be helpful to validate the role counseling services may play in minimizing stress, anxiety, and depression among nursing students.

Implications

Most people in Nepal, including the nursing students, do not seek professional help for psychological distress such as stress, anxiety, and depression due to the social stigma (Luitel et al., 2015). This study provided an opportunity for nursing students to be screened for stress, anxiety, and depression. A higher number of students reported having moderate to extremely severe levels of stress, anxiety, and depression. This finding indicates the need for an on-campus screening program for nursing students so that early detection and referral services can be provided. The study also examined campus connectedness and perceived social support, relatively newer predictors of stress, anxiety, and depression among nursing students in Nepal. Thus, filling a gap in the literature.

The majority of the students reported unavailability of counseling services in the college. A potential impact for positive social change could include commencement of counseling services in nursing campuses. Another positive social implication that the results of my study will be useful knowledge for educators, clinical instructors, and administrators, so they can assist the students feel socially supported and “connected” by

effective counseling in the campus. Communicating the findings of this study to the nursing faculty, administrators, and clinical instructors may indicate that strategies need to be planned to address the mental health of nursing students. The counseling services can play a significant role in creating awareness among the students about potential academic, clinical, and personal stressors and equipping them to adopt effective coping strategies. These implications for positive change may lead to a domino effect that improves the quality of care provided by the nursing students about the safety concerns of the patients.

Conclusion

Stress is inevitable during the academic years of a student and a lower level of stress may likely motivate and positively help nursing students achieve their goals. Research has revealed that stressful situations if managed with effective coping, can keep stress at lower levels. Nursing students may experience high levels of stress, anxiety, and depression if they fail to use effective coping strategies, perceive low levels of social support, and campus connectedness. This study found a significant relationship of campus connectedness, social support, and coping with stress, anxiety, and depression. Most nursing students in this study used problem-focused coping strategies which are believed to be more effective than emotion-focused coping, however, their levels of stress, anxiety, and depression were relatively high. This finding suggests that extensive and in-depth research should be carried out further to explore other factors that could be related to stress, anxiety, and depression. In spite of high levels of campus connectedness and social support, most of the sampled students experienced moderate to extremely

severe level of stress, anxiety, and depression. Increasing levels of depression may induce self-injury or suicidal tendency in students.

The majority of the students in this study reported unavailability of counseling services in their college. Hence, the colleges should take the initiative to introduce and implement services such as periodic mental health screening and counseling facilities that will enhance the mental health of the students. Nursing students will go on to take up the nursing profession in due course of time, and this profession is prone to handling stressful or anxiety-filled times. An individual who is already under stress, is experiencing anxiety or depression, may not be able to handle the stress and anxiety of patients and such situations that they would constantly come across. Also, if the nurses themselves do not know the coping strategies and how to apply coping strategies to reduce stress, anxiety, and depression, they will not be able to help their patients. Therefore, the college administrators and the faculty need to work in sync with the management in helping students with stress and anxiety management, which will empower the students in becoming mentally healthy nursing professionals. Finally, the findings in this study have contributed to the nursing literature related to campus connectedness and social support and their relationship with stress, anxiety, and depression among nursing students in Nepal.

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Appendix A: Sociodemographic Information

Researcher's use Only

Code No.

1. Age (completed years): _____

2. Current living arrangement?
   a. Hostel
   b. Living with family
   c. Living with relatives
   d. Others, specify _____

3. Residence prior to joining college
   a. Rural
   b. urban

4. Marital Status
   a. Single
   b. Married
   c. Divorced
   d. Widowed

5. Arrangement for paying college fee
   a. Scholarship
   b. Education loan
   c. Parents/relatives
   d. Others, specify _____

6. Do you have difficulty in paying your fee on time?
   a. Yes
   b. No

7. The reason for choosing nursing as your college education
    a. Self interest
    b. Parent (s) influence
    c. Failure in another interested field
    d. Others (specify): _____

8. Are counseling services available in your college?
    a. Yes
    b. No

If yes,

9. Who provides counseling services in your college? (you can choose more than one responses)

a. Faculty
b. Professional counselor
c. Administrative staff
d. Others, specify _____

10. Current academic year
    a. First
    b. Second
    c. Third
    d. Fourth

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

Appendix C: Campus Connectedness Scale

Directions: The following statements reflect various ways in which you may describe your experience on this entire college campus. Rate the degree to which you agree or disagree with each statement using the following scale (1= Strongly Disagree and 6 = Strongly Agree). There is no right or wrong answer. Do not spend too much time with any one statement and do not leave any unanswered.

Strongly Disagree Mildly Disagree Mildly Agree Agree Strongly Agree
1 2 3 4 5 6

1. There are people on campus with whom I feel a close bond.....1 2 3 4 5 6

*2. I don't feel that I really belong around the people that I know on campus…….....1 2 3 4 5 6

3. I feel that I can share personal concerns with other students.....1 2 3 4 5 6

4. I am able to make connections with a diverse group of people …….1 2 3 4 5 6

*5. I feel so distant from the other students..... 1 2 3 4 5 6

*6. I have no sense of togetherness with my peers.....1 2 3 4 5 6

7. I can relate to my fellow classmates.....1 2 3 4 5 6

*8. I catch myself losing all sense of connectedness with college life.....1 2 3 4 5 6

9. I feel that I fit right in on campus.....1 2 3 4 5 6

*10. There is no sense of brother/sisterhood with my college friends.....1 2 3 4 5 6

*11. I don't feel related to anyone on campus.....1 2 3 4 5 6

12. Other students make me feel at home on campus.....1 2 3 4 5 6

*13. I feel disconnected from campus life.....1 2 3 4 5 6

*14. I don't feel I participate with anyone or any group.....1 2 3 4 5 6

*Reverse score negative items 2, 5, 6, 8, 10, 11, 13, 14 and sum all 14 items

Appendix D: Multidimensional Perceived Social Support Scale

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

Circle the "1" if you **Very Strongly Disagree= VSD**

Circle the "2" if you **Strongly Disagree= SD**

Circle the "3" if you are **Mildly Disagree= MD**

Circle the "4" if you **are Neutral= N**

Circle the "5" if you **Mildly Agree= MA**

Circle the "6" if you **Strongly Agree= SA**

Circle the "7" if you **Very Strongly Agree= VSA**

		VSD	SD	MD	N	MA	SA	VSA
1.	There is a special person who is around when I am in need	1	2	3	4	5	6	7
2.	There is a special person with whom I can share joys and sorrows	1	2	3	4	5	6	7
3.	My family really tries to help me.	1	2	3	4	5	6	7
4.	I get the emotional help & support I need from my family.	1	2	3	4	5	6	7
5.	I have a special person who is a real source of comfort to me.	1	2	3	4	5	6	7
6.	My friends really try to help me	1	2	3	4	5	6	7
7.	I can count on my friends when things go wrong	1	2	3	4	5	6	7
8.	I can talk about my problems with my family	1	2	3	4	5	6	7
9.	I have friends with whom I can share my joys and sorrows	1	2	3	4	5	6	7

10.	There is a special person in my life who cares about my feelings	1	2	3	4	5	6	7
11.	My family is willing to help me make decisions.	1	2	3	4	5	6	7
12.	I can talk about my problems with my friends	1	2	3	4	5	6	7

Appendix E: Brief Cope Inventory

There are many ways to try to deal with problems. The following items ask what you've been doing to cope with your problems. Obviously, different people deal with things in different ways, but I'm interested in how you've tried to deal with it. Each item says something about a particular way of coping. I want to know to what extent you've been doing what the item says. Use these response choices. Make your answers as true FOR YOU as you can by ticking (√) answer (either 1, 2, 3, or 4).

1 = I haven't been doing this at all

2 = I've been doing this a little bit

3 = I've been doing this a medium amount

4 = I've been doing this a lot

S.No.	Coping Strategy	1	2	3	4
1.	I've been turning to work or other activities to take my mind off things.				
2	I've been concentrating my efforts on doing something about the situation I'm in.				
3.	I've been saying to myself "this isn't real.".				
4.	I've been using alcohol or other drugs to make myself feel better.				
5.	I've been getting emotional support from others.				
6.	I've been giving up trying to deal with it.				
7.	I've been taking action to try to make the situation better.				
8.	I've been refusing to believe that it has happened.				
9.	I've been saying things to let my unpleasant feelings escape.				
10.	I've been getting help and advice from other people.				
11.	I've been using alcohol or other drugs to help me get through it.				
12.	I've been trying to see it in a different light, to make it seem more positive.				

13. I've been criticizing myself.
14. I've been trying to come up with a strategy about what to do.
15. I've been getting comfort and understanding from someone.
16. I've been giving up the attempt to cope.
17. I've been looking for something good in what is happening.
18. I've been making jokes about it.
19. I've been doing something to think about it less, such as going to movies, watching TV, reading, daydreaming, sleeping, or shopping.
20. I've been accepting the reality of the fact that it has happened.
21. I've been expressing my negative feelings.
22. I've been trying to find comfort in my religion or spiritual beliefs.
23. I've been trying to get advice or help from other people about what to do.
24. I've been learning to live with it.
25. I've been thinking hard about what steps to take.
26. I've been blaming myself for things that happened.
27. I've been praying or meditating.
28. I've been making fun of the situation.

Scales are computed as follows (with no reversals of coding):

Self-distraction, items 1 and 19

Active coping, items 2 and 7

Denial, items 3 and 8

Substance use, items 4 and 11

Use of emotional support, items 5 and 15

Use of instrumental support, items 10 and 23

Behavioral disengagement, items 6 and 16

Venting, items 9 and 21

Positive reframing, items 12 and 17

Planning, items 14 and 25

Humor, items 18 and 28

Acceptance, items 20 and 24

Religion, items 22 and 27

Self-blame, items 13 and 26