UNIVERSITY OF CAPE COAST

# NURSING STUDENTS' EXPERIENCE OF STRESS DURING THEIR EDUCATION: A STUDY IN THE CENTRAL REGION, GHANA

BY

HAYFORD ISAAC BUDU

Thesis submitted to the Department of Biological Sciences, University of Cape Coast, in partial fulfillment of the requirements for the award of Master of Nursing.

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## DECLARATION

### Candidate's Declaration

I hereby declare that this thesis is the result of my own original work and that no part of it has been presented for another degree in the university or elsewhere.

Hayford Isaac Budu

Candidate's Signature…… Date……

### Supervisors Declaration

I hereby declare that the preparation and presentation of the thesis were supervised in accordance with the guidelines on the supervision of thesis laid down by the University of Cape Coast.

Principal Supervisor's Name: Dr Mate Siakwa

Signature:…… Date:……

Co-Supervisors Name: Professor Janet Gross

Signature:…… Date:……

## ABSTRACT

Nursing students suffer high levels of stress during their education experiences. Nursing research supports the argument that practicum experience of course work yields more stress than class experience. The purpose of this study was to investigate the perceived level of stress and sources of stress in undergraduate and diploma nursing students. In this study, a sample of 170 students, 104 undergraduate level 400 and 66 level 300 diploma nursing students completed a modified form of the Hassles Assessment Scale to evaluate the students' sources of stress. Findings revealed that the diploma nursing students had higher stress levels but these stress levels were closer to the mean of the average stress levels of the undergraduate nursing students indicating both research groups experienced high level of stress. Another significant finding was that, females were found to feel more stress than males. The findings of high stress levels in both nursing groups supports the assumption that stress management needs to be addressed. Further examination of this topic could offer more information.

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## DEDICATION

To my family

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| | |
|---|---|
| CCNMTC | Cape Coast Nursing and Midwifery Training College |
| UCC | University of Cape Coast |
| GPA | Grade Point Average |

# CHAPTER ONE

# INTRODUCTION

This chapter provides the background information of the study, the problem statement with the purpose of the study and research questions that have been formulated. The chapter ends with the description of the significance, limitations, delimitations of the study and operational definition of terms.

## Background to the Study

Academic performance is of great importance to parents, teachers and students themselves. Even the larger society is aware of the long term effects of positive or negative academic performance since graduates from educational institutions are expected to shape the destiny of society (Salami, 2001). Unfortunately, academic achievement of students has become a matter of grave concern to many educationists (Aremu, 2001). Students have many obstacles to overcome in order to achieve their optimal academic performance (Womble, 2003). Stress is a common problem to students in schools. The way it is managed may reflect in their academic performance (Salami, 2001). The effects of stress can be positive or negative. Positively used, stress can be a motivator for an improved quality of life. Stress can also be negative when it becomes destructive based on how an individual perceived it and reacted to it (Mallinckrodt and Wei, 2005).

College students have many obstacles to overcome in order to achieve their optimal academic performance. It takes a lot more than just studying to achieve a successful college career. Different stressors such as time management, financial problems, sleep deprivation, social activities, and for some students even having children, all pose their own threats to a student's academic performance. The way that academic performance is measured is through the ordinal scale of grade point average (GPA). A student's grade point average determines many things such as class rank and entrance to graduate school. Much research has been done looking at the correlation of stress factors that college students' experience and the effects of stress factors as academic situational related problems. The study of Niemi and Vainiomaki (1999) took into account a variety of factors that can diminish a student's academic performance; factors such as fraternity and sorority activities, job responsibilities, or having a boyfriend or girlfriend. One extraneous variable that was taken into account was that, at most universities, students involved in activities such as fraternities or sororities, and also athletics, must maintain an acceptable grade point average to participate. This factor by itself could attribute to these students' grade point average being higher than the average college student.

The process of encountering increasing and changing amounts of stress over a period of time helps one to develop methods of stress management in adulthood. Methods that improve adaptation to stress include exercise, time for friends, relaxation, and participation in endeavors that improve self-concept (Wong, Perry and Hockenberry, 2002).

Daily stressors in life cannot be avoided, nor can major life changes. Stressful events that change one's life for an extended period can lead to health related problems. Events that may cause unhealthy stress include death, divorce, moving away from home, serious illness, and financial struggles (Wong, et al., 2002). Those who dwell on life events suffer higher stress (Sarafino and Ewing, 1999). Stress related health problems are rampant in society. An estimated 75-90 percent of all primary care health providers see patients with stress related problems (Peckham, 2001). Sustained psychological stress has been associated with numerous health consequences, especially for those who interpret daily hassles of life as being stressful. Research supports that students in higher education have higher stress levels than the general public. Beck, Hackett, Srivastava, Mckim, and Rockwell (1997) stated that nursing students suffer higher levels of stress during their college years than college students in other disciplines.

Learning and memory can be affected by stress. Although an optimal level of stress can enhance learning ability (Kaplan and Sadock, 2000), too much stress can cause physical and mental health problems (Niemi and Vainiomaki, 1999; Laio, Lu and Yi, 2007), reduce self-esteem (Bressler and Bressler, 2007; Linn and Zeppa, 1984; Silver and Glicken, 1990), and may affect the academic achievement of students (Choi, Abbott, Arthur and Hill, 2007; Elliot, Shell, Henry and Maeir, 2005; Hofer, 2007; Robbin, Allen, Casillas, Peterson and Le, 2006; Trautmein, Ludtke, March, Koller and Baumert, 2006).

University students might experience high stress due to academic commitments, financial pressures or lack of time management skills. When stress is perceived negatively or becomes excessive, it can affect both health and academic performance (Campbell and Svenson, 1992) and can have an adverse effect on students (Amirkhan, 1998; Covington, 1997). Moreover, if the pressure is prolonged and perceived as unmanageable, these experiences have been shown to elicit helplessness, depression and stress (Carver and Scheier, 1994), thereby placing the academic futures of some students in jeopardy (Marcos and Tillema, 2006).

**Statement of the Problem**

Nurses and students have been identified as a population with an elevated stress level. Stressors for student nurses, identified by Beck and Srivastava (1991), included adjusting to a rigorous program of theory, long hours of study and pressures of student clinical practice requiring emotional and personal maturity. According to Beck and Srivastava (1991), the practicum portion of nursing education was identified by nursing students as more stressful than didactic courses. For nursing students these real life situations are stressful due to the fact that patients can be affected negatively or positively. The idea of causing harm, even death to a patient, is a fear for nursing students and nurses (Admi, 1997).

In Ghana, the age requirement for applying into Nursing and Midwifery Training College is between 18 and 35 years. This age boundary comes with its challenges. Some of the nursing students are already parents with the responsibilities of home keeping and childcare while in school. Apart from the

few nursing students who are parents, majority have just finished the senior high school. They were not employed and financially depending on their parents.

Nursing students with varying economic background and challenges pursue their professional training amidst the presence of curricular and extracurricular activities that emanates as a result of the decision to become a professional nurse (Shields, 2001). The student nurse who is economically and academically stressed can only achieve goals of becoming a professional nurse if the institution of training has a facility for counseling at the disposal of the students (Colin, 1996).

In various educational settings it is not unusual for a number of students not to be able to pay their fees, hence not be able to write examinations (Hofer, 2007). These students have peculiar problems and challenges such as caring for self, depending on parent or guardian who could not meet their financial needs, and some may have families that they take care of while in school. Some student nurses drop out while some unceremoniously look for other professions (Admi, 1997).

In Ghana, since 2009, there had been a nationwide decline in the pass rate of the nursing licensing examination nationwide. Ministry of Health Investigative Report (April, 2013) identified students' poor preparation prior to the licensing examination as one factor. These observations can be linked to a variety of stressors the student nurses experience ranging from socio-economic to choice of vocation that tend to affect their academic performance (Hofer, 2007).The poor pass rate of the nursing students in the licensing examination is causing conflict among students, nurse educators, and the Nursing and Midwifery Council in Ghana. The various institutions in charge of nursing education keep blaming one

another for the poor pass rate at the licensing examination. The issue is, these bodies have been in existence and have worked and produced better Nursing Licensing Examination results in the past. What then is the matter that nobody could fathom? The very nurse educators who have produced better Nursing Licensing Examination results over the years are still working while the Nursing and Midwifery Council structures and mandate have not changed. However, curricula have been reviewed and examination structures have moved from more of recall to critical thinking. What are the sources of stress which are inimical to students' academic performance?

**Purpose of the Study**

The main purpose of this study was to determine the stressors experienced by nursing student during their period of education.

**Objectives of the Study**

The objectives of the study were to determine;

i. the stressors experienced by nursing students;
ii. any relationship between the levels of stress and self -reported academic performance; and
iii. differences in cause of stress between diploma and undergraduate nursing students.

**Research Questions**

The research questions to this study were as follows:

1. What are the stressors nursing students experience?
2. Is there a relationship between level of stress and self-reported academic performance?

3. Is there difference in causes of stress between diploma and undergraduate nursing students?

**Significance of the Study**

It is envisaged that the findings would contribute to knowledge in the area of stress management among student nurses in tertiary institutions of Central Region. It would also help identify the most prevalent stressors of nursing students in the Central Region of Ghana in terms of social, educational and personal lives that require counseling services. The findings from this research would also serve as a good basis to recommend to stakeholders the establishment of counseling units in tertiary institutions.

Furthermore, the findings might provide the Ministry of Health (MOH), Ghana Health Service (GHS), Nursing and Midwifery Council (NMC), Nursing and Midwifery Training Colleges (NTC) and universities the real issues affecting nursing students so that these relevant authorities could provide solutions to the emerging stressors and needs of the student nurses. Consequently, it would be of much benefit to the tutors and lecturers in the nursing training colleges and universities to help address appropriately the needs and stressors of nursing students.

**Delimitations**

The research was conducted to identify the stressors of nursing students in Central Regional nursing and midwifery institutions. The study was limited to the final year students of Cape Coast Nursing and Midwifery School and the University of Cape Coast final year nursing students.

**Limitations**

A study of this nature ideally should have had a national coverage. Thus, all the universities offering nursing programmes and nursing and midwifery colleges, both public and private, to allow for generalization. However, this study used only two nursing institutions in the Central Region for convenience and ability to overcome many more challenges inherent in conducting a research of this nature.

Another limitation of this study was that all independent variables were measured using self-report scales. The challenge is that, participants might respond with socially desirable, rather than truthful answers, when completing self-reports. Self-report is, by nature, subjective. Participants might respond differently at different times depending on what is happening in their lives. Also, it is difficult to determine if the participants responded honestly or according to what they thought the researcher wanted to know. Therefore, these issues were addressed as best possible by asking participants to respond as honestly as they could. In addition, they were instructed to respond based on their current feelings of stress levels.

Another limitation was using a single data collection time. The surveys for this study were conducted at the beginning of the semester when it was likely students experienced less stress than later in the semester. If the surveys had been completed closer to the final part of the semester, students might have experienced higher stress levels and, perhaps, higher stress scores. Surveying students at the beginning and at the end of the semester might also yield different results because stress and academic work change throughout the semester. Other researchers have used two intervals for data gathering with varying results.

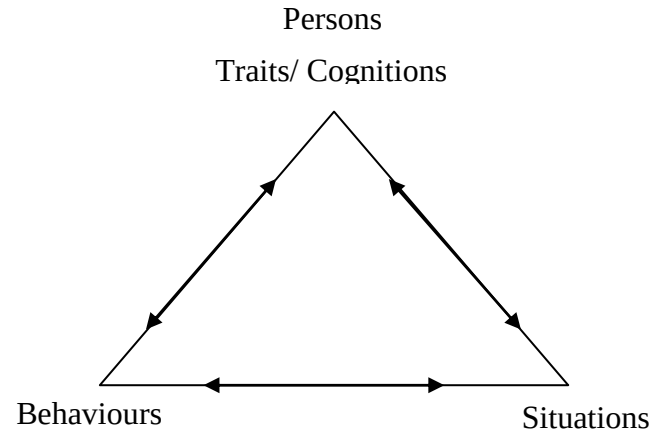
# CHAPTER TWO

# REVIEW OF LITERATURE

This chapter sought to explore the literature of stress experienced by student nurses during their education. Areas covered under this included both the theoretical and empirical review under subheadings developed from the research questions namely – conceptual framework, stress and stress theories, students' perception of stress, effects of stress and stress measures  Literature was gathered from review of online libraries, journals, publications, and internet using the Google search engine.

## Conceptual Framework

The philosophical underpinnings of this study was Bandura's concept of self-efficacy.  Bandura's (1995) theory of personality also stresses the concept of reciprocal determinism; reflects his belief that neither personal dispositions nor environmental factors can by themselves explain behaviour. Bandura's concept of reciprocal determinism considers the natural influence of the person's characteristics, behaviour, and situation. Each of the three factors can affect other two. Bandura assumes that personality traits, environmental factors, and overt behaviour affect one another.




Source: Sdorow, 1995

According to Bandura (1995), one of the most important cognitive factors in reciprocal determinism is self-efficacy. Self-efficacy is the extent to which a person believes that she or he can perform behaviours that are necessary to bring about a desired outcome. Self-efficacy determines one's choice of activities, intensity of effort, and persistence in the face of obstacles and unpleasant experiences; in part by reducing the anxiety that might interfere with engaging in the activity (Bandura, Reese, and Adams, 1993). Self-efficacy helps to explain cessation of smoking (Schwarzer, 1992), adherence to physical exercise (Rotter, 1990) and student's performance in academic courses (Bandura, 1995). Depressed people tend to have feelings of low self-efficacy, perhaps because they feel a lack of control over the outcomes in their lives (Zuckerman, 1998). There are several determinates of whether one has a feeling of self-efficacy in a given situation. The first determinant is previous success.

A person will have a greater feeling of self-efficacy in a psychology course if he or she had done well in previous courses. The second determinant is vicarious experience. One will have greater feeling of self-efficacy if it is known other students have succeeded in the course. The third determinant is verbal persuasion. The individual will have a greater feeling of self-efficacy if self pep

talks are used. And the fourth determinant is physiological arousal. One will have greater feeling of self-efficacy if he is at an optimal level of arousal. If one is too aroused while making a classroom speech and notices your tense muscles, increased heart rate, and irregular breathing pattern, one might become so distracted that he mispronounces words or loses his place.

Self-efficacy and stress are closely related concepts. In Lazarus' cognitive model of stress (Lazarus and Folkman, 1984), personal beliefs such as self-efficacy were crucial in evaluating demands from the environment. Each external demand is evaluated as a threat or a challenge, and persons with high self-efficacy beliefs are more likely to evaluate the demands as a challenge (Chemers, Hu, and Garcia, 2001; Lazarus and Folkman, 1984; Pintrich and De Groot, 1990). That is, the extent to which a person feels confident about his or her competence to handle a given situation affects whether a given task is perceived as stressful or threatening, rather than as a challenge.

When a task is appraised as a challenge, one is more likely to select an effective coping strategy and to persist at managing the task. Self-efficacy thus affects the perception of external demands and mediates the relation between external stressors and psychological stress (Bandura, 1995). Using a path analytic model, Chemers, Hu, and Garcia (2001) found that the effect of academic self-efficacy on stress was completely mediated by evaluations of demands as threat or challenge. In the other direction, physiological arousal states associated with stress and anxiety offer information affecting self-efficacy judgments (Pajares, 1996; Solberg et al., 1998).Similarly, Hackett, Betz, Casas and Rocha-Singh (1992) suggested that stress and anxiety may depress self-efficacy judgments of students.

Cognitive theory posits a strong negative relationship between self-efficacy and perceived stress, and empirical findings offer support for the theory. In a number of studies, self-efficacy and stress among college students have been consistently shown to have moderate to strong negative correlations (Gigliotti and Huff, 1995; Hackett et al., 1992; Solberg, Hale, Villarreal, and Kavanagh, 1993; Solberg and Villarreal, 1997; Torres and Solberg, 2001).

While social cognitive theory provides a coherent framework linking self-efficacy and stress, most research has explored their independent roles in explaining academic outcomes. Very little work has examined their joint influence as determinants of academic success in college. Hackett et al. (1992) identified both perceived stress and academic self-efficacy as predictors of cumulative grade-point average (GPA) for traditional students enrolled in engineering schools. Good grades were associated with low perceived stress and high self-efficacy.

**Stress and Stress Theories**

According to Smith and Renk (2007), stress is the emotional and physical strain caused by a response to pressure from the outside world. It is specific response by the body to a stimulus that disturbs normal functioning. A stressor is an event or any stimulus that causes an individual to experience stress (Basavanthappa, 2004). It is almost impossible to live without some stress and most would not want to, because it gives life some motivation and excitement to progress in life. If stress gets out of control, it may harm health, relationships and enjoyment of life. Common stress reactions include tension, irritability inability to concentrate and a variety of physical symptoms, that is, headache and fast heartbeat. Stress results from the interaction between stressors and the

individual's perception and reaction to those stressors (Romano, 1992). The amount of stress experienced may be influenced by the individual's ability to effectively cope with stressful events and situations.

The important thing to remember about stress is that certain forms are normal and essential. As the body responds to various forms of physical or psychological stress, certain predictable changes occur. These include increased heart rate, blood pressure (systolic and diastolic), and secretions of stimulatory hormones. These responses to stress will occur whether the stress is positive or negative in nature. In lay terms, it is known as the fight or flight mechanism. Continual exposure lowers the body's ability to cope with additional forms of psychological or physiological stress.

The results of continuing stress may cause disruption in one or more of the following areas of health: physical, emotional, spiritual and/or social. Stress is a process that builds (Basavanthappa, 2004). It is more effective to intervene early in the process, rather than later.

Life exists through the maintenance of a complex dynamic equilibrium, termed homeostasis, that is, constantly challenged by internal or external adverse forces, termed stressors, which can be emotional or physical in nature. Thus, stress is defined as a state of threatened or perceived by the individual as threatened homeostasis which is re-established by a complex repertoire of behavioural and physiologic adaptive responses of the organism. Neuroendocrinic hormones have a crucial role in coordinating basic as well as threatened homeostasis. Also, neuroendocrine hormones intervene in pathogenesis of dyshomeostatic or cacostatic situations of disease (Chrousos and Gold, 1992).

Campbell (2006) defined stress as the adverse reaction people have to excessive pressure or other types of demands placed on them. Stress occurs when an individual is confronted by a situation perceived as overwhelming and cannot cope with.

Stress is a subjective feeling that occurs when an event requires a change in an individual's behavior, physical status, or cognitions based on his/her personal appraisal of the environment (Selye, 1976). Coping mechanisms are activated when the environment and person interact and processes of appraisal and response occur (Lok and Bishop, 1999; Lopez and Gormley, 2002). The person appraises the situation and available coping resources. When perceived demands of the environment exceed perceived available resources of the person, that person subjectively feels stress (Cohen, 1986).

Subjective stress varies from person to person. Some people are more vulnerable to stress, as hypothesized in the diathesis-stress theory (Lazarus and Folkman, 1984; Moos and Schaefer, 1993). The diathesis-stress theory postulated that psychological and physiological vulnerabilities make some people more sensitive to stress, more likely to perceive environmental events as threatening, and more likely to react to perceived threats or stress in their environment. There is an ongoing interaction process between people and their environments. As the environment impacts the person, the person also impacts the environment (Lazarus and Folkman; Moos and Schaefer). This interaction is characteristic of full-time college students who face many life changes that increase stress. These life changes include increased independence, academic responsibilities, and self-management skills. High stress levels are associated with low academic achievement among four-year students but this relationship has not been clearly

examined among two-year community college students (Andrews and Wilding, 2004; Chemers et al., 2001).

Stress began as an ambiguous, general, and abstract construct, but as research evolved, the stress conceptualization became more specific (Bee and Bjorklund, 2004). There are essentially three theoretical perspectives on the mechanisms of stress: (1) stimulus-oriented theory, (2) response-oriented theory, and (3) interactionist theory. The first theory, stimulus-oriented theory, focused on an actual event as a stimulus for stress and does not reflect individual interpretation or perception of the event (Bee and Bjorklund, 2004). Stimulus-oriented theory proposes that the potential for stress is present in the environment.

Thus, stress is viewed as an external force (Spielberger, 1986). Any aspect in the environment that increases demands upon the individual also imposes stress upon that individual (Derogatis and Coon, 1993). The external event stimulates, pressures, or impacts the person and results in a change or adaptation to the environment. Severity and frequency of changes in events might affect their potency as stressful events. Consequently, some stress measures, such as the Life Events Scale (LES) (Holmes and Rahe, 1967), measures environmental events. Some researchers have characterized life event scales as less comprehensive than inventories based on the individual's perception of stress because these scales do not take into account how the person reacts to the environment (Selye, 1976).

The second theory, response-oriented stress theory, focused on how the person responds to the environment. Within response-oriented stress theory, researchers initially defined stress as an individual's subjective response to environmental events that demands change, coping, and adaptation (Holmes and Rahe, 1967). For example, Selye (1976) conceptualized stress as the individual's

response to any event or situation that required a change in the individual. Any positive event that resulted in change was called eustress. In contrast, any negative change was called distress. Stress places pressure on an individual's cognitive, social, emotional, and physical status, a phenomenon called personal distress. These demands for change challenge people's ability to maintain physiological homeostasis and social and emotional stability (Aronson, Wilson, and Akert, 2005; Holmes and Rahe, 1967; Selye, 1976).

In support of response-oriented stress theory, Katkin, Dermit, and Wine (1993) postulated that an event is not inherently stressful, but that stress depends on the response elicited by the event. The person's response to environmental pressure to change defines the presence or absence of stress. Consequently, their stress definition focused strictly on the person's response. Response-oriented theory was used in conjunction with stimulus-oriented theory to create the third stress theory: interactionist stress theory.

In interactionist stress theory, stress is the result of an interaction between the person and the event. For example, Lazarus and Folkman (1984) stated that stress results from the personal appraisal of the event and the appraisal of resources used to cope with the event. There are two processes involved in the appraisal process, the initial or primary appraisal and the secondary appraisal. During the primary appraisal process, the individual assesses the interaction or the relationship between the person and the environment, based on how the relationship impacts the person. Individuals first evaluate the environmental pressures impacting them. Then, during the secondary appraisal process, individuals evaluate or appraise their resources to respond to the pressure from the event (Lazarus and Folkman, 1984).

Primary and secondary appraisal processes are interdependent in that each affects the other (Moos and Schaefer, 1993). As the perception of environmental pressures increases, stress feelings increase and might be manifested in psychological symptoms. Denial, withdrawal from reality, and avoidance are examples of psychological responses. The ongoing, dynamic reciprocity between the person and the environment is also identified as a transaction that results in a new state (Lazarus and Folkman, 1987). Thus, this theory has also been called transactional stress theory.

After the identification of transactional stress theory, Breznitz and Goldberger (1993) examined differences between cognitive appraisal and automatic appraisal. Cognitive appraisal is deliberate, purposeful, and well thought-out. Automatic appraisals are not well planned and might result in the fight or flight response in the face of environmental pressures. Appraisals might be based on previous experiences including excessive anger or fear, might be unrealistic, and might reflect a stable coping response.

Each of these stress models has addressed how stress operates upon a person. Several researchers viewed stress as a stimulus but did not consider the person's stimulus perception (Bee and Bjorklund, 2004; Derogatis and Coon, 1993; Spielberger, 1971; Spielberger and Saronson, 1986). Other researchers focused upon the individual's response to the environment (Holmes and Rahe, 1967; Katkin et al., 1993; Seyle, 1976). The interactionist stress perspective (Lazarus and Folkman, 1987) combined both of these views and was, therefore, more comprehensive, examining both the individual and the environment. In the interactionist framework, stress resulted when an individual interacts with the environment. This interaction might result in stress when individuals appraised

the demands of their environments and perceived their resources as insufficient to cope with the demands of environmental events. Stress activates the attachment system (Mikulincer and Horesh, 2000). When experiencing stress, the attachment system determines how one reacts to stress based on previously acquired working models (Larose and Soucy, 2005). Working models, internal cognitive representations of attachments, are based on previous interactions between the individual and the caregiver (Perrine, 1998).

Working models provide the frameworks for individuals' reactions to stress. Positive reactions to stress include communication, seeking support from others, and active problem solving. Negative reactions to stress include anger, blaming others, and using avoidance mechanisms such as denial (Howard and Medway, 2004). Negative stress reactions result in impaired information processing, decreased memory, diversion of attention from cognitive tasks, and, generally, result in lowered academic performance (Andrews and Wilding, 2004; De Meuse, 1985; Shields, 2001; Struthers, Perry and Menec, 2000). When individuals experience stress, attention is diverted to feeling worthless and overwhelmed (Larose and Soucy, 2005). These thoughts exacerbate the stress reaction (Mikulincer et al., 2000). Impaired information processing (Lok and Bishop, 1999) and impaired memory are also linked to stress (Vondras, Powless, Olson, Wheeler and Snudden, 2005). When a person experiences stress, the attachment system, the result of interactions between the individual and the primary caregiver that began at birth is activated (Bowlby, 1988). The attachment system influences how a person copes with stress (Mallinckrodt and Wei, 2005). Positive reactions to stress are consequences of secure adult attachments. Negative reactions to stress are the consequences of insecure adult attachments.

The stress system located both in the central and peripheral nervous system, automatically activated whenever a threshold of any stressor is exceeded. This plays a major coordinator role in the re-establishment of homeostasis by eliciting a complex behavioral and physical adaptive response. According to Hudd, Dumlao, Erdmann-Sager, Murray, Phan, Soukas and Yokozuka (2000), this response is defined as the stress syndrome and represents the unfolding of a relatively stereotypic, innate program of the organism that has evolved to coordinate homeostasis and protect the individual during stress (Hudds et al., 2000).

Stress is a common element in the lives of every individual, regardless of race or cultural background (Tweed, White and Lehman, 2004). Over the past few decades, there has been significant investigation on the issues of stress and management of stress. In addition, college students have been shown to possess a unique set of stressors which can affect their daily experiences. Academic stress among students has long been researched. Researchers haves identified stressors as too many assignments, competition with other students, failures, lack of pocket money, poor relationships with other students or lecturers, family or problems at home (Misra and Calisto, 2004). Institutional (university) level stressors are overcrowded lecture halls semester system, and inadequate resources to perform academic work (Campbell, 2006).

Stress is one factor that influences academic success and compromises academic performance (Salas, Driskell, and Hughes, 1996). Stress occurs when individuals feel pressure to adapt to their environment (Seyle, 1993). When faced with demands or pressure to adapt or change, people cognitively appraise their

resources, coping skills, and ability to respond to demands of the environment (Lazarus and Folkman, 1984).

Coping is the management of these demands (Larose and Bernier, 2001). College is an environment that places demands upon students to adapt. If individuals believe they cannot meet demands, they might experience stress that may result in lowered self-esteem, poorer health habits, poorer self-management choices (Hudd, et al., 2000), impaired information processing (Lok and Bishop, 1999), and impaired memory (Vondras, Powless, Olson, Wheeler, and Snudden, 2005). A study by Ross, Niebling and Heckert, (1999) indicated that when tertiary students interacted with the institutional environment, they experienced many new demands such as increased work load; pressure to maintain grades and earn a degree; establishing relationships with new faculty members and new friends, increased responsibilities for time-management, and increased independence from their families.

Studies of four-year college students also indicated stress reduced grade-point average (Andrews and Wilding, 2004; Chemers, Hu, & Garcia, 2001; De Meuse, 1985; Shields, 2001; Struthers, Perry, and Menec, 2000). Andrews and Wilding (2004) found that stress such as depression and financial difficulties were negatively associated with poor academic performance. Chemers and colleagues (2001) found stress resulted in lower grades and decreased commitment to remain in school. Furthermore, De Meuse (1985) and Shields (2001) both found inverse relationships between classroom performance and stress. Further evidence was provided by Struthers and colleagues (2005) who found that stress inversely predicted course grades at the end of the academic year.

Academic stress is best understood with respect to how individual students react to stress. Some students presumably cope with stress more effectively than others. A factor that may mediate stress is an individual's attachment to another adult who provides advice, counsel, or comfort (Bernier, Larose, Boivin, and Soucy, 2004; Soucy and Larose, 2000). Adult attachment occurs when the following criteria are met: individuals seek the adult attachment figure, particularly when under stress, individuals seek security and comfort in the adult attachment relationship, and individuals protest when the adult attachment figure becomes or threatens to become inaccessible (Colin, 1996). Secure adult attachment relationships maintain love and trust between the individuals and adult attachment figures.

The benefits for individuals involved in secure adult attachments include: more confidence to explore and learn about the environment (Aspelmeier and Kerns, 2003; Bernier et al., 2004), increased self-confidence, optimism, increased academic competency (Fass and Tubman, 2002; Larose, 2005), as well as ego strength, social competence, and secure integration in peer groups during adolescence (Bernier et al., 2004). These benefits, in turn, lead to improved academic success. For example, Aspelmeier and Kerns (2003) found that insecure attachments were related to increased anxiety about academic performance and lower academic success. Bernier and colleagues (2004) found that secure attachments were associated with higher academic achievement among four-year college students. Soucy and Larose (2000) concurred and found that secure adult attachment resulted in improved college adjustment and, consequently, improved academic success.

Better academic success is more likely to lead to college retention. Perrine (1998) argued that research on attachment also added to the understanding of college retention among four-year college students. Using self-identification paragraphs and the self-report Perceived Stress Scale (PSS) (Cohen, Kamarck, and Mermelstein, 1983), as well as grade-point average, in a convenience sample of four-year college students, Perrine found that students with insecure attachment perceived more stress that students with secure attachments. The eight students in the study with insecure attachment, all earned non-passing grade-point averages and quit college, whereas securely attached students perceived less stress and were more likely to persist in college.

As students respond to the environmental demands placed upon them, they appraise the resources available to meet the demands of their environment. Lazarus and Folkman (1984) argued that appraisal included categorizing environmental demands and evaluating resources that met demands. Resources included adult attachments in their lives (Howard and Medway, 2004). Communication with adult attachment figures, seeking support from attachment figures, and perceiving environmental demands as challenges rather than threats were considered positive responses to stress and might alleviate stress (Bernier et al., 2004; Hammen, et al., 1995; Howard and Medway, 2004). Consequently, a secure adult attachment might reduce the impact of stress upon college students' academic success.

Academic success benefits people socially, economically, and personally (Gotlib & Wheaton, 1997; Pascarella and Terenzini, 2005). Social benefits include increased civic and community engagement, increased political involvement, better racial understanding, and increased social networking (Pascarella and Terenzini). Economic benefits include higher lifetime earnings which in turn, positively affect living standards and provide more opportunities for education, health care, and family development (Nigel and Pope, 2005). Personal benefits include seven areas of college student development: achieving competence, managing emotions, moving through autonomy toward interdependence, developing mature interpersonal relationships, establishing identity, developing purpose, and developing integrity (Chickering and Reisser, 1993). More education results in beneficial life outcomes (Gotlib & Wheaton). The benefits of college are shared with families, communities, and society as a whole. Achieving these benefits depends in part on student variables and personal characteristics that students inherently bring to the college setting. Among these variables are stress, adult attachment, and their interaction. These variables are briefly introduced in the following sections.

Beck, Hackett, Srivastava, Mckim, and Rockwell (1997) completed an in depth study of perceived levels of stress and the actual sources of stress in different university professional schools. The research was largely based on previous research done by Beck and Srivastava (1991) that looked at perceived levels and sources of stress in baccalaureate nursing students. The design of the study was descriptive, correlational. Objectives of the study were to determine the perceived levels and sources of stress of students in the health-related fields, and to determine the levels and sources of stress in baccalaureate nursing school

students. Data were collected through two questionnaires', the General Health Questionnaire and the Beck-Srivastava Stress inventory. Results of the research supported that baccalaureate-nursing students experienced elevated stress levels and elevated levels of physiological and psychological stress compared to symptoms of students in other health related fields. These scores did not support evidence of stress levels being influenced by the year in the nursing, program, or by the university the student was attending (Beck, et al., 1997).

In a study completed by Beck and Srivastava (1997), perceived levels and sources of stress in baccalaureate nursing (BN) students in the United States of America were evaluated. Perceived levels and sources of stress in various years of the nursing program were identified by using the General Health Questionnaire (GHQ), a stress inventory, and a demographic sheet. Reliability and validity were supported for the GHQ. The stress inventory was not tested for reliability, but face and content validity were established. The results of the study showed high mean levels of stress in the Bachelors in Nursing program and a higher, prevalence of psychiatric symptoms than were found in the general population. In addition, high GHQ scores were consistently found across all years in the nursing program (Beck and Srivastava). Since nursing programs differ greatly, the study findings were limited by isolating data collection to one nursing school. The researchers suggested that sources of stress should be evaluated further, and with multiple schools of nursing to see if results could be generalized.

**Stressors and the Clinical Component**

Following the overwhelming support in Beck and Srivastava's (1997) study of elevated stress in nursing students associated with the clinical component, Mahat (1998) conducted a study to identify junior baccalaureate nursing students' perceived stressors and ways of coping during the clinical component of their studies. The Critical Incident Techniques Tool, developed by Flanagan (1993), was used as the questionnaire in the study, along with a demographic questionnaire. Neither the reliability nor validity was discussed in the report. There were 107 participants (55% return rate). Perceived clinical stressors were placed into five categories after data analysis. Reported findings suggested the top stressor categories to be the initial experience (35.5%), interpersonal relationships (27.1%), ability to perform roles (23.4%), heavy workload (9.3%), and feelings of helplessness (5.6%).

Data supported that the initial clinical experience was the top stressor, regardless of ethnicity (Mahat, 1998). Over half of those students who regarded the major clinical stressor to be the initial experience associated elevated stress with administering injections or providing care. However, the most surprising statistic found in the study was that interpersonal relationships was a close second stressor regardless of ethnicity. Forty-five percent of the students in this clinical stressor category associated stress with the problem of interacting with their instructors (Mahat, 1998). Other students in this category reported problems interacting with nurses, patients, and others. The remaining students found the stressors in the initial experience to be communication with patients, performing physical assessments, and administering oral medications (Mahat, 1998).

In the stress category, ability to perform roles, the majority of students felt stress because of inadequate preparation, while only 8% were actually fearful of harming a patient. The two remaining classifications were very close statistically. Most students in the heavy workload category associated stress with learning to care for real people and the demands of nursing school (Mahat, 1998). Furthermore, those students who reported feelings of hopelessness did so specifically when caring for drug-addicted newborns and mothers. Mahat (1998) reported that the majority of students evaluated in this study used problem solving and social support coping strategies to deal with stress, although coping strategies differed when related to each clinical category. Other studies have also looked at stressors and coping in nursing students (Mahat, 1998).

An Australian study by Sonderegger and Barrett (2004) looked at nursing student stress in beginning students. The study was initiated because of an overwhelming number of students dropping out of the program before the end of their first semester. Modeled after the United States of America nursing schools, the Australian schools should have been well prepared to prevent this recurrent problem. However, as stated by Sonderegger and Barrett ,2004, studies from both countries showed the same research result; nursing students are stressed and nobody can figure out how to handle it the source (Sonderegger and Barrett, 2004).

In the study by Sonderegger and Barrette (2004), a questionnaire was passed out during a class to 79 students in the middle of their first semester. All 79 students participated. The questionnaire was derived from the Students Work-place Stressors Schedule, and from issues raised in qualitative interviews with multiple small groups of students. Using the questionnaires, students identified

major stressors. Data were analyzed through a multivariate analysis to determine major stressors for the population and to determine if a specific stressor affected any sub-populations. Results supported that the majority of stress felt by the students resulted from anxiety related to course work, for example exams, passing assignments, etc.

For the most part personal/interpersonal questions did not elicit a high response of stress, except for the questions relating to finances. In addition, older students who were returning exhibited much higher stress relating to science requirements and writing assignments than the younger students who entered the program directly from high school (Sonderegger & Barrett, 2004). Suggestions made to reduce stress included addressing financial concerns of students, exhibiting a genuine interest in the students' well-being, and including a program to enhance student coping strategies. The authors supported that further research needs to be done to evaluate what kind of program should be implemented; however, this study did confirm the demands of nursing school worldwide (Sonderegger and Barrett, 2004).

Another study completed in 1998 by Mahat, a Nepalese researcher, looked at stress and coping strategies of first year Nepalese nursing students in the clinical setting (Mahat, 1998). A convenience sample of 104 nursing students from four campuses was chosen. Data were collected through questionnaires. Responses from the students were placed into four different categories: interpersonal relationships, initial experiences, feelings of helplessness, and demeaning experiences. Of these four categories, 50% of the responses were grouped in interpersonal relationships. Results showed the majority of the students (70%) reported interpersonal relationship as a negative interaction with

their teachers. The next most frequent category of stressors was the initial experience category. The majority of the students identified caring for the patients as the top stressful event. Coping strategies included seeking social support from friends and family to mediate stress and stressors. This finding duplicated research findings of junior baccalaureate students by the same researcher (Mahat, 1996).

A study was conducted to identify stressful events of first-year Nepalese nursing students in the clinical setting and to determine how they cope with the stressful events (Supe, 1998). Four stressful events identified were: interpersonal relationships, initial experiences, feeling helpless, and demeaning experiences. The most frequently reported stressful event was interpersonal relationship (50%). Eight categories of coping from students' description were problem-solving, accepting responsibility, seeking social support, self-control, tension reduction, avoidance, wishful thinking and negative feelings. The majority of students utilized the seeking social support category of coping.

A similar study conducted over a period of two academic years found that highly depressive symptoms were reported by 55% of the sample (Supe, 1998). A majority of students (65%) experienced an increase in burnout symptoms and an increase in frequency of alcohol use during their educational years. These behaviors were related to a lack of social support and external attribution style. In addition to educating in a professional course it is also important to take into account the quality of life of the students during the years of nursing training.

College students experience stress from several sources that include pressure for academic achievement (Dusselier, Dunn, Wang, Shelley and Whalen, 2005), pressure to change and adapt to the college environment (Misra and Castillo, 2004), and memory impairment (Vondras et al., 2005). Stress increases as students make the transition into the demands of college life (Andrews and Wilding, 2004). In addition, students might experience increased demands for more and better academic work, more self-discipline, better time management, and improved decision-making (Chemers et al., 2001) than they experienced in high school.

According to the American College Health Association 2006 survey of college students, the one greatest health obstacle to college students' academic performance was academic stress. Of the 97,357 college students who participated in the survey, 32 percent reported that academic stress had resulted in an incomplete i.e. a dropped course or a lower grade. Academic stress can be the ultimate career stopper. The key to avoid becoming a dropout, as a result of academic stress, is to identify its source. These sources are known as stressors or factors which lead to academic stress.

Academic stress is a mental distress with respect to some apprechended frustration associated with academic failure, apprechension of such failure or even an awareness of the possibility of such failure (Gupta and Khan, 1987). In the context of school, academic stress means a pervasive sense of urgency to learn all these things which are related to or prescribed by the school (Shah, 1988). Academic stress is the product of a combination of academic-related demands that exceed the adaptive resources available to an individual.

It is widely acknowledged that a student's academic achievement and academic ability depend on both internal and external factors such as proper study habits, intelligence, educational aspirations of self and parents, medium of instruction and so on. If these situations are not conducive for learning .They may lead to academic stress.

Several authors have studied the academic stress of different age group. Zeidner (1992) study reported that students appeared to be under high by pressure originating from course overload and academic evaluation procedures and least stressed by personal familiar and social factors. Clift and Thomas (1983) reported that course work assignment was a major source often keeping the students under continual examination puts to stress. Kohlon's (1983) study revealed that lack of parental help, congenial examination system, living up to parental expectation, attitude of the teachers and fear of examination were the stress causing factors. Berg and Keinan's (1986) also found that imposing excessively high self-expectation was the most trouble stressor leading to academic stress. Shirom's (1986) study revealed that examination related stresses were found to be causing high stress followed by class room assignment overload.

For academic excellence as well as taking advantage of future opportunities that come in the way of one's life, learning is important as it assumes great importance at $11^{th}$ and $12^{th}$ standard which it is the terminal stage in setting the stage for one's academic career.

It is seen from Banerjee's report (2001) that every year about 25,000 students in the age group of 18 to 20 years commit suicide during the examination month (i.e. March to June). This is substantiated with District Central Records Bureau of Dharwad that every year at least 4-5 students committed suicide. It was also seen from the II year pre-university examination (PUC) results of 2001 that out of 3, 94.200 students who appeared for exam, only 154,840 that is 39.28% were successful, 7% less than previous year's performance. This trend is alarming and may account for a lot of wastage of human resources. There is a need to understand the problems of the students who are appear is the PUC examination. Therefore, the study was taken up to identify stressors that lead to academic stress among pre-university students with the following objectives.

**Health-Related Stressors**

According to Hammer, Grigsby and Woods (1998), there are three health-related factors which contribute to the academic performance of students. These factors are comprised of amount of exercise, sleeping habits and nutritional routines which have been found to contribute to how a student performs academically.

Researchers have evaluated the effect of exercise on the academic performance of university students but arrived at different findings. Schafer (1996), in a study involving 891 upperclassmen and graduate students, found that students who exercised at least seven hours per week obtained significantly lower grades than students who exercised six or fewer hours weekly or who did not exercise at all. The same results were reported in Trockel, Barnes and Egget (2000) study. They opined that taking time out of frequent study hours to work out reduced the grades of students. Trockel et al. (2000) further observed that a

frequent occurrence on college campuses is that students becoming almost addicted to exercise, turning a healthy behaviour into one that is psychologically unhealthy.

Reports in literature indicated that sleeping habits accounted for the largest amount of variance in the Grade Point Average (GPA) of students (Lack, 1986). Kelly, Kelly and Clanton (2001) classified sleepers into three categories: 1) short sleepers, individuals who, when left to set their own schedule, slept six or fewer hours; 2) average sleepers, individuals who slept seven or eight hours; and 3) long sleepers, individuals who slept nine or more hours out of twenty-four. The study found that people who were considered long sleepers reported higher GPAs. This is because people who slept fewer hours at night may have psychological maladjustment and this increased their anxiety and stress, which has been associated with poorer academic performance. Disturbed sleep pattern cause problems to students such as shortened attention span and increased number of errors on tests. Similarly, Pilcher and Walter (1997) found a negative effect of sleep deprivation on the cognitive performance of college students.

Another health-related factor that has been shown to be related to academic performance is nutrition. One aspect of the relationship between diet and academic performance concerned the consumption of a breakfast meal. Eating breakfast appeared to predict high GPAs (Trockel et al., 2000), and influence the recall ability and short-term spatial memory (Benton and Sargent, 1992). However, Trockel et al. (2000) demonstrated that eating breakfast did not significantly affect semester GPA after controlling for the effects of weekend and weekday wake-up times. Although the effects of eating breakfast (Benton and Sargent, 1992; Meyers, 1989; Pollitt, 1995) and other nutritional variables on the

academic performance of elementary students (Kalman, 1997) have received much attention in the literature, little information on the effects of nutritional habits on the academic performance of college students could be found.

**Social Factors**

A number of social factors that may contribute to stress among the college or university students have been identified. They include lack of time and/or support for and from family and friends, family commitments, financial difficulties, and problems with college roommates (Linn and Zeppa, 1984; Legault, Cureen-Demes and Pelletier, 2006; Orpen, 1996; Vitaliano, Maiuro, Mitchell and Russo, 1989; William, 1996).

A considerable number of studies have been conducted to examine the effects of parental, family member, friend, academic, and peer support on anxiety and academic performance of college students (Cutrona, Cole, Colangelo, Assouline and Russel, 1994; DeBarard, Spielmans and Julka, 2004; Hackett et al., 1992; Lazarus and Folkman, 1984; Mallinckrodt, 1988; Orpen, 1996; Smith and Renk, 2007; William, 1996). However, the results on the extent of support received from a particular source are mixed and inconclusive. William (1996) found that social support ratings were significant predictors of graduate GPAs after controlling for the different ethnicities in the US. Specifically, Curona et al. (1994) reported that the social support of parents predicted college GPA, after controlling for the American College Test (ACT) scores. Hackett et al. (1992) discovered that encouragement from faculty members predicted the academic performance of university students but peer support and academic performance were negatively related. Orpen (1996) confirmed that outside social support from friends and family members, but not from peers, moderated the negative effects

on test anxiety and thus examination results of students. Findings were obtained from Smith and Renk's (2007) study where parental support was not significantly related to academic-related stress; however, it is the level of social support received by the college students from significant others such as their boyfriends or girlfriends who might be more likely to be an immediate influence in their daily lives. Smith and Penk's (2007) further stressed that since many of these students are transitioning into adulthood and may be experiencing their first serious romantic relationship, they may become more entrenched with their significant others than they otherwise would, particularly as they experience and make attempts to cope with academic-related stress.

The results of prior studies suggested that financial burdens could be a potential stress factor for college students which contributed to low academic performance (Andrews and Wilding, 2004; Cheng, Leong and Geist, 1993; Kariv and Heiman, 2005; Misra and Castillo, 2004; Moffat, McMonnachie, Ross and Morrison, 2004; Mori, 2000; Omigbodun, Onibokun, Yusof, Odukogbe and Omimgbodum, 2004; Seyed, Tafreshi and Hagani, 2007; Smith and Renk, 2007; Tyrrell, 1992). Pfeiffer (2001) highlighted that there are many students who have to work while they are attending college in order to pay for their fees. There are many times when students have to work late at night and then do not have time to study. This can be hazardous for students as worrying about their financial issues and grades can be an immense stressor in their academic life.

The academic motivation given by a students' roommate has been shown to have a positive impact on that student's academic achievement (Blai, 1972). In fact, students who are more successful academically may create less stress for their roommates and, thus, allow them to perform better (Ryan, 2004). Based on

the review of literature, very little research has been conducted to ascertain whether problems with roommate is another factor contributing to stress and its effect on the academic performance among the college students. It is thus interesting to include this stressor in the study.

**Academic Factors**

Academic problems have been reported to be the most common source of stress for students (Aldwin and Greenberger, 1987; Blumberg and Flaherty, 1985; Clark and Rieker, 1986; Evans and Fitzgibbon, 1992; Felsten and Wilcox, 1992; Kohn and Frazer, 1986; Malinckrodt et al, 1989; Struthers et al., 2000). Schafer (1996) asked college students about their most stressful daily hassles.

He observed that the most irritating daily hassles were usually school-related stressors such as constant pressure of studying, too little time, writing term papers, taking tests, plans, and boring instructors. Among the stressors, test or exam anxiety is one of the main causes of academic stress and most students seem to be more emotionally vulnerable to examinations (Fisher, 1994). Another frequently reported source of stress that most college students experienced is receiving a lower grade than they expected (Evans and Fitzgibbon, 1992; Kohn and Frazer, 1986; Mallinckrodt et al., 1989; Ratana, 2003). Students have a fear of failure in relation to their grades and academic work. To fall short of their own or other's expectation in school, job, athletics, or any other activity, one risks both external and internal costs: threat to academic or career prospects, disapproval, rejection, humiliation, guilt and a blow to the self-esteem (Schafer, 1996).

Stress associated with academic activities has been linked to various negative outcomes such as poor health (Greenberg, 1981; Lesko and Sumerfield, 1989), depression (Aldwin and Greenberger, 1987), and therefore poor academic

performance (Clark and Rieker, 19867; Lin and Zeppa, 1984). For example, Lesko and Summerfield (1989) found a significant positive correlation between the incidence of illness and the number of exams and assignments. Similarly, Aldwin and Greenberger (1987) found that perceived academic stress was related to anxiety and depression in college students. Nevertheless, while too much stress can interfere with a student's preparation, concentration, and subsequently performance, positive stress can be helpful to students by motivating them to peak performance (Pfeiffer, 2001).

College students have a unique cluster of stressful experiences or stressors. According to Ross, Neibling and Heckert (1999), there are several explanations for increased stress levels in college students. First, students have to make significant adjustments to college life. Second, because of the pressure of studies, there is strain placed on interpersonal relationships. Third, housing arrangements and changes in lifestyle contributed to stress experienced by college students. In addition, students in college experience stress related to academic requirements, support systems, and ineffective coping skills. Whereas these factors have been found to be responsible for stress, it is worth noting that in order to minimize the stress among students; the school administrators must develop appropriate strategies that will enable them to detect in advance the symptoms and causes of the stress.

**Perception of Stress**

Admi's (1997) research took a more in depth look at the clinical experience as a source of stress. The purpose of the study was to identify the nursing students' perceptions of stress in their initial clinical experience and to compare that with the actual experienced stress. The researcher identified the students' perceived stress levels during the initial clinical experience.

The Nursing Student's Stress Scale (NSSS) developed by Rhead (1995) was used to determine perceived level of stress. Content validity was ensured. The questionnaires were administered three times during the year. Multiple analyses of variance with repeated measures were performed. Hotelling's T2 test was used to examine the results. Results of the study supported that perceived stress was higher in the students than actual stress, and that stress during the beginning of the clinical experience was higher than the stress scores at the end of the experience (Shields, 2001). However, data did not support that younger students were more stressed than older students (Admi, 1997). The study by Admi (1997) made an important research finding, and did an excellent job in developing a design to gather data about stress during the practicum. Gathering data multiple times showed a consistent pattern of decline in stress throughout the practicum experience.

In another research study, Rhead (1995) looked at the cause of the consistent stress pattern in nursing students in Australia. Rhead focused the study on both the academic and clinical aspects of the educational process. To do this, Rhead compared the Registered General Nurse and the student nurse obtaining the Diploma of Higher Education. Using a modified nurse's stress scale, the

intensity of stress was investigated. The question asked was: Is there a significant difference in the academic and practical stress in the nursing program of Registered General Nurse and Diploma of Higher Education in Nursing?

According to Rhead (1995), the results of the study supported:

- Registered General Nurses (RGN) were significantly less stressed than Diploma of Higher Education (Dip. H.E.)
- RGN students were more stressed in academic than practical elements of training
- Dip. H.E. nursing students were equally stressed by practical and academic elements
- Male student nurses were found to be less stressed than females
- There were no correlations between the ages and TSS

This study offered a unique aspect to the topic of stress in nursing students. It supported the idea that different courses in nursing school trigger different scores of stress. In addition, it supported the importance of having a solid and supportive curriculum. Other studies noted that there were higher stress levels in the beginning years of study. RGN students were third year and the Dip. H.E. students in nursing were second year (Rhead, 1995). The study supported the significance evaluating students in each semester of the curriculum.

Few studies evaluated the curriculum set-up, and how this affected students' stress levels. However, curriculum and academics are large portions of stress in college students. In addition, in the review of the literature related to studies of stress in nursing students few articles compared nursing with majors outside the health field; however, one author supported a unique opinion when compared to more recent research (Carter, 1982). Although not recent, this study

was conducted to determine if women in the majors of nursing and liberal arts experienced different or similar distress and to evaluate coping styles of these two groups.

The study consisted of students from three baccalaureate schools of nursing and one private undergraduate college of liberal arts. In total 103 nursing students and 103 liberal arts students were included in this study. Findings between the two disciplines showed similarity between the two, with a few exceptions. Emotional stress varied only in the psychoticism symptom dimension, where liberal art majors were significantly higher. When examining social network, data revealed that nursing students had more close friends than liberal arts majors. The only difference in coping styles was found among liberal arts majors. Liberal arts majors used college-oriented coping styles much more; meaning students in liberal arts sought out support from counselors and administrators more often than nursing students. Also, contrary to the general opinion, both groups of college women had low drug use, with the exception of over the counter medications; and nursing students use was much lower (Carter, 1982). Since these data are old, one must consider the changes that have taken place in society, for example the transition of the role of women.

Students are subjected to different kinds of stressors such as the pressure of academics with an obligation to succeed, an uncertain future and difficulties of integrating into the system. The students also face social, emotional, physical and family problems which may affect their learning ability and academic performance. There has been growing appreciation of stressors involved in medical and nursing training college students, especially freshmen, are a group particularly prone to stress (Dzurilla and Sheedy, 1991) due to the transitional

nature of college life (Romano, 1992). Too much stress can cause physical and mental health problems, reduced self-esteem and may affect students' academic achievement. One such study was conducted to assess stress in medical students at Seth G.S. Medical College by Supe (1998). The findings of the study were that 73% of students perceived stress more in second and third year medical students than first year. Academic factors were perceived as the greater cause of stress. Another study conducted by Chandrasekhar (2010) with medical students revealed that most common sources of stress were staying in hostel, high parental expectations, vastness of syllabus, tests/exams, lack of time and facilities for students.

As far as the nursing programmes are concerned, the various research findings indicated that stress exists for students in both the clinical and academic aspects of the programme. A study conducted by Timmins and Kaliszwer (2002) on third year nursing students at Trinity College, Dublin revealed five major factors as sources of stress. Firstly were academic stress factors. The second and third components concerned relationships; the former involving teaching-related staff, and the latter involving the clinical experience. The last two components suggested that finance and death of patients were independent sources of stress. Another study conducted by Beck and Srivastva (1991) at School of Nursing, Memorial University of Newfoundland, St. John's, Canada found that the students experienced high stress levels and that they were at risk of having a physical or psychiatric illness.

In that study, the subjects were divided in two groups: the RN and the generic students. Results showed that while both groups were stressed, the generic students reported significantly higher levels of stress. This finding might have been due to the fact that while the Registered Nurses (RN) student already had some experience, the generic students were experiencing the stress of academic work, clinical activities for the first time.

Attempts have also been made in relation to understanding experiences leading to eustress in nursing students. One such study was conducted by Gibbons, Dempster and Moutray (2008) to identify experiences that led to both distress and eustress and to make recommendations to help students cope with course demands. The themes identified were clinical experience, support, learning and teaching experience and course structure. There were experiences within each that were perceived as sources of distress and eustress. Another study by Gibbons, Dempster and Moutray (2010) revealed that sources of stress that were likely to lead to distress were more often predictors of well-being than were sources of stress likely to lead to positive, eustress states, with the exception of clinical placement demands. Self-efficacy, dispositional control and support were important predictors, and avoidance coping was the strongest predictor of adverse wellbeing. Approach coping was not a predictor of well-being (Gibbons et al., 2008).

**Studies of Stress Effects**

Stress is a major obstruction to academic success (Dusselier et al., 2005). Consequently, there are many studies that examined how stress influenced college students (Andrews and Wilding, 2004; Chemers et al., 2001; De Meuse, 1985; Dusselier et al., 2005; Gore, Aseltine, Colten, and Lin, 1997; Hudd et al., 2000;

Misra and Castillo, 2004; Ross et al., 1999; Shields, 2001; Struthers et al., 2000; Vondras et al., 2005). Generally, research used self-reported stress measures such as questionnaires, surveys, and telephone interviews. All the studies used convenience samples except for two (Dusselier et al., 2005; Gore et al., 1997) which used random samples. All the studies, except two, were completed using four-year college students. Gore and colleagues (1997) used two- and four-year college students and Vondras and colleagues (2005) used volunteer participants living in the community.

Several common elements were discovered among the studies. Using a random undergraduate university sample, Dusselier and colleagues (2005) indicated that females perceived more stress than males and that personal behaviors and relationship conflicts contributed to stress. In a study investigating the relationship between life-stress and achievement, researchers found that life stress predicted a decrease in exam performance from the first to the second year (Andrews and Wilding, 2004). In a study of stress and personal functioning after high school and during the transitions to college (Gore et al., 1997), commuter college students (those that lived at home with parents and attended a four-year college) were more likely to have lower mastery levels, poorer self-perceptions of mastery, and a poorer life quality based on cognitive appraisals, resulting in higher stress levels and less academic success, in contrast to students living on campus.

Misra and Castillo (2004) compared American university students' academic stressors and stress reactions with those of university international students using the Gadzella's Student-Life Stress Inventory (SLSI) (Gadzella, 1991). The majority of participants in both groups were female. Five categories of

academic stress were assessed: frustrations, conflicts, pressures, changes, and self-imposed stress. American students perceived higher academic stress than international students in all categories except change. Americans also reported more self-imposed stress and displayed higher behavioral and physiological reactions to stress than international students (Misra and Castillo, 2004).

Shields (2001) found an inverse relationship between stress and academic success. As stress increased, grade-point average declined. As stress declined, grade-point average increased. Coping skills that decreased stress were associated with more persistence in college and more academic success. In non-persisters, or students who later quit school, stress was unrelated to grade-point average or coping skills.

Vondras et al. (2005) examined everyday stress effects on the episodic memory test performance among young, middle-aged, and older adults living in the community. Everyday stress was defined as daily stressful events and accumulated life events. Stress was reflected in behaviors that ranged from mild memory impairment to dissociation and flashbacks. Young and mid-life adults who showed high everyday stress on the Perceived Stress Scale (PSS) (Cohen, Kamarck, and Mermelstein, 1983) also demonstrated memory impairments similar to that of adults who were 40 or more years of age. One could conclude that stress might impair memory and result in an inability to recall information and, thus, lower academic success (Vondras et al., 2005).

De Meuse (1985) administered a self-report measure of life events stress to university participants during the second week of the semester. The measured outcomes included scores on four exams, extra credit points, and total course points. Findings showed that all six outcomes were negatively correlated with life

events stress. Life events stress totals were negatively correlated with the first and third exams and total course points. Thus, life stress predicted course grades.

Ross and colleagues (1999) calculated response percentages on a stress survey and found that interpersonal stress was the most frequent source of stress for university students. Using Chi Square, Hudd and colleagues (2000) found stress resulted in poor health habits, poor health decisions, poor self-habits, and low self-esteem.

Using structural equation models, Struthers and colleagues (2000) found that stress was inversely related to college grades among four-year college students. Problem-focused coping was defined as coping that involved thoughts, actions, and strategies directed toward diminishing the source of stressful events or the impact of events. Stress was related to academic success. Chemers and colleagues (2001) found optimistic students had lower stress levels and more social support than pessimistic students. Students with high self-efficacy scores had less stress, higher academic expectations, and higher academic performance than students who had low self-efficacy scores. Low stress scores also resulted in less health problems and better overall college adjustment, whereas high stress scores resulted in more health problems and poorer overall college adjustment (De Meuse, 1985).

Could it be that the level of stress being experienced by nursing students has bearing with the reported negative trend in their academic performance? A number of studies have found a relationship between stress and poor academic performance (Clark and Rieke, 1986; Linn and Zeppa, 1984, Struthers, Perry and Menec, 2000). Dubois and Felner (1992) and Ganesan (1995) have found that stress made significant contribution in poor school performance of adolescents.

Felsten and Wilcox (1992) found a significant negative correlation between the stress levels of college students and their academic performance. In a similar study, Blumberg and Flaherty (1985) found an inverse relationship between self-reported stress level and academic performance. Malik and Balda (2006) also found a negative correlation between stress and academic achievement. Stress pervades the life of students, and tends to impact adversely their mental and physical health, and their ability to perform schoolwork effectively (Clark and Rieker, 1986; Felsten and Wilcox, 1992).

A study by Hammer, Grigsby and Woods (1998) did not take into account a main factor that a lot of college students have to deal with, having children and families to care for. Today more and more people are deciding to return to college after being out in the work force. Coming back to college puts high demands on older people, who sometimes have a family already. The factor of having a family could itself contribute to a lower GPA, but one study looked at this factor and found the contrary. What helped these students was the support they found within the University, support such as childcare services, and also courses in how to hone superior studying skills (Hammer, Grigsby and Woods, 1998).

Mostly, it has been found that students with more stressed behaviour show average or poor results in academic achievement (Pfeiffer, 2001). Their concentration never works properly in educational field (Pfeiffer, 2001). Though most of the research findings support the negative relationship between stress and academic achievement, a few researches also disagreed with the inverse relationship between stress and academic performance (Pfeiffer, 2001). O'Connor (2003) reported a significant positive relationship between stress and academic performance of college students. Kaplan and Sadock (2000) reported that an

optimal level of stress can enhance learning ability. Gelow, Brown, Dowling and Torres (2009) stated that a state of emotional stress was reported to have a significant positive relationship with reported school performance. In another research, Womble (2003) did not find any relationship between perceived stress and academic achievement of college students.

**Stress Measures**

Physiological and psychological stress measures are available. A common physiological stress measure is the amount of cortisol found in the saliva or the blood of a person (Kurina, Schneider, & Waite, 2004). Cortisol is a hormone produced by the adrenal glands, and it is postulated that cortisol levels are elevated when people experience stress. Cortisol levels are measured by blood draws or saliva specimens taken at specified times over several days. These specimens are then frozen until analyzed in a laboratory. The advantages of cortisol in research include highly specific, measurable, objective stress assessments. The disadvantages include the inaccessibility to laboratory equipment, assessment cost, and relying on participants to take the samples as assigned in a timely manner, store them in a freezer, and then return them to the lab when asked (Kurina, Schneider, & Waite, 2004). Consequently, physiological measures require equipment, are invasive, and costly. Therefore, more studies use psychological stress measures than physiological measures.

Psychological stress measures include self-report journaling, daily diaries, self-report checklists, and life-event inventories. An approach to stress assessment is to ask participants to write their own stressful experiences and reactions in a journal or diary (ADE; Stone & Neal, 1984). Research indicates that the personal identification and journaling of daily stressful events provides specific

individualized stress information. The journaling approach is based upon personal perception in stress assessment. However, disadvantages of the journaling approach include participants who lack writing skills and time to participate, which makes the use of journaling questionable. Journal and diary entries are also difficult to assess and measure objectively.

Self-report checklists, such as the Perceived Stress Scale (PSS; Cohen, Kamarck, & Mermelstein, 1983) and the Life Event Survey (LES; Saronson, Johnson, & Siegel, 1978), assess stress frequency and severity using Likert scales. Stress is a subjective state that can be measured by self-report, but self-report measures are inherently problematic because participants are not always honest or accurate (Bernier et al., 2004; Misra & Castillo, 2004; Vogel & Wei, 2005). However, self-report measures are popular and readily lend themselves to analyses. Self-report surveys frequently appear in the literature because of ease of administration, lower cost than physiological measures, and efficiency for analyses. Examples of survey instruments include the LES, the Student-Life Stress Inventory (SLSI; Gadzella, 1991), and the Perceived Stress Scale (PSS; Cohen, Kamarck, & Mermelstein, 1983).

The LES consists of 57 events, each rated on a 7-point Likert scale from very positive to very negative, depending on its impact on the participant's life. Three scores are calculated: one for positive events, one for negative events, and total score. The negative score of the LES has been used as a predictor of psychological problems. However, the LES has low test-retest reliability for positive events (.19 to .53). Consequently, it is rarely used in current research studies (Spielberger & Sarason, 1986).

The SLSI is a 51-item self-report scale measuring academic stress and the student's stress reaction using a 5-point Likert response format (Misra & Castillo, 2004). Five categories of academic stressors are measured: frustrations, conflicts, pressures, changes, and self-imposed stress. Physiological, emotional, behavioral, and cognitive reactions to academic stressors are measured. However, nonacademic stress sources are not evaluated, so the SLSI does not provide an overall stress score. A student might experience stress outside the academic arena that would not be included in this inventory score. To address this problem, stress-rating scales were created. Initially, stress-rating scales used weighted counts of stressful events. For example, the Recent Life Changes Questionnaire (RCLQ; Miller & Rahe, 1997) is an updated combination of the Social Readjustment Rating Scale (SRRS; Holmes & Rahe, 1967) and the SLE (Hobson et al., 1995).

In 1967, Holmes and Rahe developed the SRRS as a measure of perceived stress resulting from environmental change. Participants rated a list of stressful events. For example, marriage was assigned a weight of 50 and then participants compared other events to marriage based on proportionate scaling. By using more events and changing the weight of events, Hobson et al. (1995) updated the SRRS and called it the SLE. Based on 3,122 surveys from the general population, analyses suggested that ratings were reasonably reliable stress measures (Hobson et al., 1998). Because participants evaluated each stressful event differently, variable weights were assigned for different events. An interesting finding was the overall rise in stressful event ratings between 1967 and 1995. Americans perceived more stress than 30 years before (Hobson et al., 1998). This method of stress assessment remains controversial. Because Holmes and Rahe (1967)

postulated that any environmental stimulus resulted in stress, the original self-check lists do not differentiate between positive and negative events. In contrast, Pearlin (1989) criticized event-rating scales because personal stress perception was not considered.

Research indicated that minor daily stress contributed strongly to overall stress. Therefore, some researchers used the Daily Hassles and Uplifts Scale (DHUS; Lazarus & Folkman, 1989) to assess minor daily stress. Subsequent research has also broadened into additional studies of daily coping skills and primary and secondary appraisals (Salas, Driskell, & Hughes, 1996).

Other major concerns when using event-rating scales are reliability and validity. Testretest reliability varies and often depends on the time lapse between testing times. If the time between measurements is shorter, reliability is generally higher. Stress is expected to vary across time, but it is difficult to separate actual variations from measurement error. Finally, life-event survey items might or might not reflect each participant's experiences. Consequently, the items might not be valid (Pearlin, 1989).

In response to these concerns, more researchers use stress evaluation scales. There are several self-report stress evaluation scales. The Perceived Stress Scale (PSS; Cohen, Kamarck, & Mermelstein, 1983) is efficient, easily read, and easily completed. The PSS was originally a 14-item self-report scale that allowed participants to evaluate stress severity during the previous month. The PSS is a global stress measure rather than an event-specific measure. Scores are summed and higher scores indicate higher perceived stress levels. Based on person-environment interaction, the PSS is based on the premise that people appraise events and their abilities to cope with the events. Because unpredictability, lack of

control, and overload were previously identified as stress components, PSS items measure these three stress variables (Cohen et al., 1983). Because stress varies from day to day, the PSS predictive value is more accurate when used during the first 4 weeks following stressful events than at a later time. The developers argue that the PSS is an accurate stress measure because it directly measures perceived stress, not environmental events.

In the validation of the PSS, three samples were studied, including two college student groups and one group enrolled in a community stop-smoking program. In the first sample, university freshmen completed five surveys, including the PSS. Student health visits for 44 days before the test and 46 days after the test were recorded and then categorized as illness-related, injury-related, poisoning-related, or other. The second sample of college students completed the same surveys and health service visits were recorded for 90 days before the testing and for 46 days after the survey collection day. In the third sample, 27 males and 37 females in a smoking-cessation program completed several surveys including the PSS. Coefficient alpha reliability for the PSS was .84, .85, and .86 for the three samples, respectively (Cohen et al., 1983). Two intervals were used for test-retest reliability. When the survey was readministered in 2 days to 82 students, the test-retest correlation was .85. Age was consistently unrelated to the PSS.

In all samples, there was a relationship between the number of life events and the PSS, and the PSS was also a better predictor of student health service visits than life events survey scores. In both college student samples, increases in social anxiety were correlated with increases in perceived stress. Research indicated that the PSS measures the impact of life-events based on the

participant's appraisal (Cohen et al., 1983). Because the PSS measures perception within the last month, the PSS has higher predictive value one or two months following the survey (Cohen et al., 1983) than for longer time periods.

In 1988, the original 14-item PSS scale was shortened to a 10-item version (Cohen & Williamson, 1988). Researchers used a national sample based on the 1980 U.S. Census data and telephoned participants randomly. Factor analyses were completed on the acquired data and the 4 items with relatively low factor loadings were dropped. The 10-item PSS showed slightly higher internal reliability than the 14-item survey, so it was recommended for future investigations. The PSS (the 14-item, the 10-item, and the 4-item scales) are extensively used in stress studies in a variety of populations, including college students. Studies using the PSS uncovered the following findings: Among community college students, 75% of the students were found to have moderate stress (Pierceall & Keim, 2007). High social integration in the college setting was associated with low levels of stress (Herrero & Gracia, 2004).

Interpersonal relationships were associated with low levels of stress (Lee, Keough, & Sexton, 2002). Low stress levels were also associated with happiness and meaning in life in two studies (Brissette, Scheier, & Carver, 2002; McGregor & Little, 1998). In the Brissette et al. (2002) study, optimism was related to lower stress and overall better psychological adjustment than pessimism. Additionally, other research (Nigel & Pope, 2005) indicated that female participants showed higher stress levels than males. The PSS was used as a measure of stress and correlated negatively with episodic memory test performances in three age groups (Vondras et al., 2005). Everyday stress was associated with memory impairment.

It is possible that participants who score high on the PSS might experience memory impairment that could contribute to lower college achievement. The PSS was also used as a pre- and post-survey by researchers to show that mind/body stress reduction intervention among four-year university students reduced perceived stress (Deckro, et al., 2002).

**Summary**

The literature review supported elevated stress levels in nursing students. The two major causes identified as stressors in the literature are academics and practicum experiences, which are two stressors present in the nursing education. Support from the literature promotes the need for further evaluation of stress levels in the nursing programmes, and the evaluation of perceived stress levels in a non-health related field with a practicum component. Identification of these stressors would allow for a primary intervention for students in distress.

# CHAPTER THREE

# RESEARCH METHODOLOGY

This chapter describes the research design, research setting, the population, sampling techniques and sample size used in the research. The methodology also focuses on the instrument used for data collection, pre-testing, the validity of the instrument and the method or procedure for data collection as well as data analysis.

The research questions to this study were as follows:

1. What are the stressors student nurses experience?
2. Is there relationship between level of stress and self-reported academic performance?
3. Is there difference in causes of stress between diploma and undergraduate nursing students?

## Research Design

This study used a cross-sectional type of design. Cross-sectional designs involve the collection of data at one point in time or multiple times in a short time period. All phenomena under study are captured during one data collection period. Cross-sectional designs are especially appropriate for describing the status of phenomena or relationships among phenomena at a fixed point. In a cross-sectional study, people from several different age groups are sampled and compared (Beck, 2010).

The main advantage of cross-sectional designs is that, they are economical and easy to manage. There are, however, problems in inferring changes and trends over time using a cross-sectional design (Polit & Beck, 2010).

**Research Setting**

The study settings were University of Cape Coast (UCC) and Cape Coast Nursing and Midwifery Training College (CCNMTC) in Cape Coast, the capital city of Central Region. The city is endowed with social amenities like basic, secondary and tertiary schools, health facilities, electricity and pipe-borne water. Banking and post-telecommunication facilities are also available.

The Nursing and Midwifery Training College has a hostel facility that accommodates all of its students. The students are fed three square meals a day. The students also benefit from a monthly allowance of GH¢350.00. This is a 3-year diploma awarding programme.

However, UCC nursing students do not receive monthly allowance except the registered nurses who are already receiving their monthly salary prior to their undergraduate programme. The generic students are entitled to student loan of GH¢600.00 a year which when compared to the economic status of the nation is woefully inadequate. Not all students are accommodated in the university hostels. Even those who are fortunate to be accommodated in the traditional halls of residence complain of exorbitant fees. The private hostels request double the rent charges as compared to the University. The University students must feed themselves and commute distances ranging from half to five kilometers daily for lectures. There are school buses in both schools that carry students for clinical practice. In time of any breakdown of the school bus, the students are compelled to take find their own transportation.

**Population, Sampling Size and Technique**

The population of the study was level 400 undergraduate nursing students at the University of Cape Coast (UCC) and level 300 (final year) diploma nursing students from Cape Coast Nursing and Midwifery Training College (CCNMTC). For UCC, the total population of level 400 students was 178 and that of final year students of CCNMTC was 112. The total population from the two schools chosen for the study was 290. The sample size of 170 was arrived at by application of the formula proposed by Solvin's formula (2012) which reads;

$$n = \frac{N}{1+N(e)^2}$$

Thus, n – Sample size

N – Total population size

e – confidence interval of 0.05%

1 – is a constant

$$n = \frac{290}{1+290\ (0.05)^2}$$

n = 170

To ensure equitable selection of participants from the total of 290 population, a percentage of the sample was calculated as follow:

UCC with total population of 178 was divided as $\frac{178}{290}$ x 100 = 61% $\frac{112}{290}$ while the CCNMTC with the total population of 112 was also derived as x 100 = 39%

The total sample decided upon through Solvin's formula was 170. Hence, in numerical terms, the sample form each school was determined as follow:

UCC = $\frac{61}{170}$ x 100 = 104 students

CCNMTC = $\frac{39}{170}$ x 100 = 66 students.

This study adopted simple random sampling technique. It is the least sophisticated of all sampling design (Beck, 2010). The sample is chosen by simple random selection, whereby every member of the population has an equal chance of being selected. Simple random sampling is easy when the population is small and all of its members are known. The sample units are selected by means of two main methods. These are the lottery method and the random number method (Beck, 2010). In the case of this study, the lottery method was used.

For the UCC students, 178 pieces of paper were prepared of which 104 pieces of paper bore numbers from 1 to 104 while the remaining 74 were blank. The total number of 178 pieces of paper were placed in a container and shuffled several times after each pick. Each pick was observed to ascertain the status of the paper that was picked for either blank or otherwise. Blank papers were put back into the container to replace the picked ones and shuffled before another pick was made. The procedure continued until 104 subjects were selected. The same procedure was used at CCNMTC to choose the 66 sample size from the total of 112 students.

**Ethical Considerations**

The proposal was submitted to the university's Institutional Review Board (IRB) (Appendix A). Permission from the IRB was obtained prior to data collection. Permission was sought from the Head of Nursing Department, UCC and the Principal of CCNMTC respectively. Additionally, the participants were informed of their rights to participate and withdraw willingly while confidentiality of their information would be ensured.

Participants were informed that involvement in the study was voluntary and that their participation or non-participation would not affect them in any way. The participants were asked to sign the consent form (Appendix E) prior to the distribution of the instrument. Packets were distributed by the researcher during class sessions. An introduction letter/consent form, modified Hassles Assessment Scale, and request for demographic data were included in each packet. Each packet was labeled with numbers to ease data compilation and to assure anonymity. The researcher collected all data so that anonymity was preserved. Information about dissemination of results was included in the written consent form, so all participants were aware of the study prior to completing the questionnaires.

**Instrumentation**

A modified version of Hassles Assessment Scale (Appendix A) was used as the assessment instrument. The original tool by Sarafino and Ewing (1999) was a 3-likert scale format assessing students' stress levels such as how often occurs, unpleasantness caused and agonize/worry over it. The original instrument consists of 54 items which was modified to 36 items based on item relevance to this research. This instrument has been shown to be a reliable and valid instrument for assessing student stress (Sarafino and Ewing, 1999). Data supported the use of this research tool with the population of college-aged students (Sarafino and Ewing, 1999). Questions related to demographic data, students' perception of stress and stressors and how they managed their stress were attached to the end of the modified Hassles Assessment Scale.

In order to evaluate the amount of stress that students perceived themselves to have been experiencing a modified perceived stress scale, developed by Sarafino and Ewing in 1999 was used. The perceived stress scale required responses to a series of questions which pertained to nursing education. The format of responses to the questions was a Likert scale format with answers ranging from 0 to 5 being an answer of extremely often. The scale yielded a single score and a higher score was indicative of greater levels of perceived stress.

**Pre-Testing**

Before the actual administration of the questionnaire, a pre-test was conducted for the purpose of assessing the wording, and difficulty with any questions. The initial questionnaire designed was administered to a small group of ten (10) students on affiliation programme at Psychiatric Nurses Training College, Ankaful. This school was where the researcher worked as a tutor. Based on the findings of the pre-test, some modifications were made in the instrument to make it more clear and devoid of any ambiguity and misunderstanding prior to the actual administration.

**Validity and Reliability of Instrument**

Validity of the instrument is its ability to measure what it is supposed to measure (Beck, 2010). Face and content validity was ensured by the supervisor of this research.

Reliability involves the consistency of results derived after administering the instrument (source). To ensure reliability of the instrument, questionnaires were pre-tested at Psychiatric Nurses Training College, Ankaful on students from another Nurses' Training College on affiliation at Ankaful. The responses gathered from the pilot study indicated the same trends of reliability of the

instrument. Reliable and consistent results without any differences supported the reliability of the instrument.

Cronbanch alpha was calculated as a measure of the internal reliability for the final 36-item instrument. The total instrument was found to have high internal reliability with an alpha coefficient of 0.921.

**Data Collection Procedure**

Students were informed that participation was optional and would not affect the student's status in the class in any way. The selected participants through the simple random sampling were given the packet with the modified Hassles Assessment Scale. Consent was assumed with completion of the questionnaires. The participants, after completing the questionnaire, submitted the completed packets of the questionnaire to the researcher and his assistant who were patiently waiting to receive the completed packets of the questionnaire. The packet took less than 30 minutes to complete.

**Data Analysis**

The data were cleaned and coded to reduce any error during the entering of data. The data were analyzed using the statistical package of social sciences (SPSS) 16th version. The perceived stress was scored on 5 point scale Likert format, from least, never = 0 point to extremely often = 5 points. The scores were analysed using t-test to compare the stress levels and academic achievements of male and female students and to compare the academic achievements of highly stressed, moderately stressed and less stressed students.

To determine the common stressors the nursing students experienced, regression factor analysis was used which summarized the factors to 11 while 4 factors were decided upon. Pearson's chi-square test was run to report the relationship between stress and self-reported academic performance. One-sample statistics was conducted to enable for generalization of findings.

# CHAPTER FOUR

# FINDINGS AND DISCUSSIONS

The purpose of this study was to evaluate the stress levels and sources of stress of undergraduate and diploma nursing students in their final years. Three research questions were formulated to guide the study:

i. What are the stressors nursing students experience?
ii. Is there a relationship between level of stress and self-reported academic performance?
iii. Is there difference between causes of stress between diploma and undergraduate nursing students?

## Demographic Characteristics

Demographic data are the quantifiable statistics of a given population. It is used to identify the study of quantifiable subsets within a given population which characterised that population at a specific point in time. Demographic data is essential to every research because demographic trends describe the historical changes in demographics in a population over time (Kaplan and Sadock, 2000).

A total of 170 participants were selected through simple random sampling using the lottery method. One hundred and forty-seven out of 170 participants responded to the study for a response rate of 86.5%. The statistical computations adopted to enable the researcher answer the research questions were as follows: descriptive statistics (frequencies and percentages), factor analysis, one-sample statistics t-test, Pearson's Chi Square test, independent sample t-test and cross-

tabulation. The results were analysed and are presented based on research questions.

**Table 1**
***Biographical Data***

| Variables | Diploma | | Degree | | Total Population | |
|---|---|---|---|---|---|---|
| | **F** | **%** | **F** | **%** | **F** | **%** |
| Gender | | | | | | |
| M | 10 | 20 | 44 | 45.4 | 54 | 36.7 |
| F | 40 | 80 | 53 | 54.6 | 93 | 63.3 |
| Age | | | | | | |
| 18 – 21 | 5 | 10 | 5 | 5.2 | 10 | 6.8 |
| 22 – 25 | 42 | 84.0 | 54 | 55.7 | 96 | 65.3 |
| 26 – 29 | 1 | 2.0 | 19 | 19.6 | 20 | 13.6 |
| 30 – 33 | 2 | 4.0 | 12 | 12.4 | 14 | 9.5 |
| 34 – 37 | | | 3 | 3.1 | 3 | 2.0 |
| Above 37 | | | 4 | 4.1 | 4 | 2.7 |
| Marital Status | | | | | | |
| Single | 42 | 84.0 | 76 | 78.4 | 118 | 80.3 |
| Co-habitation | 8 | 16.0 | 3 | 3.1 | 11 | 7.5 |
| Married | | | 18 | 18.6 | 18 | 12.2 |
| Number of Children | | | | | | |
| 0 | 1 | 2.0 | 82 | 84.5 | 129 | 87.8 |
| 1 | 46 | 92.0 | 11 | 11.3 | 13 | 8.8 |
| 2 | 2 | 4.0 | 3 | 3.1 | 3 | 2.0 |
| Above 3 | | | 1 | 1.0 | 1 | 0.7 |
| Ethnicity | | | | | | |
| Akan | 35 | 70.0 | 65 | 67.0 | 100 | 68.0 |
| Ewe | 7 | 14.0 | 17 | 17.5 | 24 | 16.3 |
| Frafra | 2 | 4.0 | 1 | 1.0 | 3 | 2.0 |
| Ga-Adangbe | 6 | 11.0 | 4 | 4.1 | 10 | 6.8 |
| Guan | 1 | 2.0 | 4 | 4.1 | 5 | 3.4 |
| Busanga | | | 1 | 1.0 | 1 | 0.7 |

**Table 1 continued**

| | | | | | | |
|---|---|---|---|---|---|---|
| Dagomba | | | 3 | 3.1 | 3 | 2.0 |
| Igbo | | | 1 | 1.0 | 1 | 0.7 |
| Language Spoken | | | | | | |
| Akuapim | 2 | 4.0 | 1 | 1.0 | 3 | 2.1 |
| Ewe | 6 | 23.0 | 16 | 16.5 | 22 | 15.0 |
| Fante | 20 | 40.0 | 21 | 21.6 | 41 | 27.9 |
| Frafra | 2 | 4.0 | | | 2 | 1.4 |
| Ga | 5 | 10.0 | 6 | 6.2 | 11 | 7.5 |
| Nzema | 1 | 2.0 | 1 | 1.0 | 2 | 1.4 |
| Twi | 14 | 28.0 | 45 | 46.4 | 59 | 40.2 |
| Bassari | | | 1 | 1.0 | 1 | 0.7 |
| Bono | | | 2 | 2.1 | 2 | 1.4 |
| Dagaare | | | 1 | 1.0 | 1 | 0.7 |
| Igbo | | | 1 | 1.0 | 1 | 0.7 |
| Krobo | | | 1 | 1.0 | 1 | 0.7 |
| Likpakpaln | | | 1 | 1.0 | 1 | 0.7 |
| Residence | | | | | | |
| School Hostel | 48 | 96.0 | 58 | 59.8 | 106 | 72.1 |
| Private Hostel | 2 | 4.0 | 39 | 40.2 | 41 | 27.9 |
| Religion | | | | | | |
| Christianity | 45 | 90.0 | 93 | 95.9 | 138 | 93.9 |
| Islam | 1 | 2.0 | 4 | 4.1 | 5 | 3.4 |
| Traditionalist | 1 | 2.0 | | | 1 | 0.7 |
| Others | 1 | 2.0 | | | 1 | 0.7 |

The majority of the respondents (63.3%) were females with the age range between 22-25 years. Akans constituted the largest population of 68%. More females (80%) in diploma programme, whereas degree programme had more males (45.4%). Majority (72.1%) lived in school hostels.

**Research Question 1: What are the stressors nursing students experience?**

One of the objectives of the study was to find out the stressors nursing students experience during their education both at the diploma and the undergraduate level.

**Table 2**

***Causes of Stress***

| | Never | Rarely | Occasionally | Often | Very Often | Extremely Often |
|---|---|---|---|---|---|---|
| | N (%) | N (%) | N (%) | N (%) | N (%) | N (%) |
| Annoying social behaviour of others | 13 (8.8) | 42 (28.6) | 60 (40.8) | 23 (15.6) | 8 (5.4) | 2 (1.4) |
| Annoying behaviour of self | 22 (15.0) | 57 (38.8) | 48 (32.7) | 14 (9.5) | 3 (2.0) | 2 (1.4) |
| Appearance of self | 34 (23.1) | 53 (36.1) | 29 (19.7) | 15 (10.2) | 7 (4.8) | 3 (2.0) |
| Mistakes of self | 26 (17.7) | 52 (35.4) | 44 (29.9) | 17 (11.6) | 5 (3.4) | 3 (2.0) |
| Athletic activities of self | 14 (9.5) | 34 (23.1) | 54 (36.7) | 27 (18.4) | 12 (8.2) | 2 (1.4) |
| Bills and Expenses | 15 (10.2) | 25 (17.0) | 59 (40.1) | 24 (16.3) | 14 (9.5) | 5 (3.4) |
| Boredom | 14 (9.5) | 52 (35.4) | 44 (29.9) | 19 (12.9) | 9 (6.1) | 3 (2.0) |
| Crowd and large social group | 16 (10.9) | 38 (25.9) | 51 (34.7) | 25 (17.0) | 8 (5.4) | 4 (2.7) |

**Table 2 continued**

| | | | | | | |
|---|---|---|---|---|---|---|
| Dating | 14 (9.5) | 50 (34.0) | 47 (32.0) | 18 (12.2) | 8 (5.4) | 4 (2.7) |
| Environmental | 8 (5.4) | 26 (17.7) | 64 (43.5) | 28 (19.0) | 13 (8.8) | 3 (2.0) |
| Extra curriculum groups | 4 (2.7) | 25 (17.0) | 52 (35.4) | 42 (28.6) | 14 (9.5) | 6 (4.1) |
| Exams | 4 (2.7) | 11 (7.5) | 38 (25.9) | 41 (27.9) | 32 (21.8) | 18 (12.2) |
| Exercising | 10 (6.8) | 33 (22.4) | 61 (41.5) | 23 (15.6) | 9 (6.1) | 2 (1.4) |
| Facilities | 12 (8.2) | 37 (25.2) | 42 (28.6) | 29 (19.7) | 14 (9.5) | 7 (4.8) |
| Family obligations | 18 (12.2) | 30 (20.4) | 48 (32.7) | 22 (15.0) | 13 (8.8) | 5 (3.4) |
| Family relationships issues | 18 (12.2) | 42 (28.6) | 40 (27.2) | 32 (21.8) | 6 (4.1) | 2 (1.4) |
| Fear of physical safety | 24 (16.3) | 38 (25.9) | 44 (29.9) | 18 (12.2) | 12 (8.2) | 4 (2.7) |
| Fitness | 19 (12.9) | 38 (25.9) | 59 (40.1) | 14 (9.5) | 8 (5.4) | 4 (2.7) |
| Food | 15 (10.2) | 45 (30.6) | 35 (23.8) | 23 (15.6) | 11 (7.5) | 11 (7.5) |
| Forgetting to do things | 18 (12.2) | 47 (32.0) | 44 (29.9) | 28 (19.0) | 4 (2.7) | 3 (2.0) |
| Friends and peers | 10 (6.8) | 37 (25.2) | 56 (38.1) | 23 (15.6) | 11 (7.5) | 5 (3.4) |
| Future plans | 8 (5.4) | 27 (18.4) | 46 (31.3) | 29 (19.7) | 16 (10.9) | 12 (8.2) |
| Getting up early | 3 (2.0) | 19 (12.9) | 32 (21.8) | 34 (23.1) | 35 (23.8) | 14 (9.5) |
| Girl/boy friend relationship | 26 (17.7) | 34 (23.1) | 35 (23.8) | 25 (17.0) | 11 (7.5) | 8 (5.4) |

**Table 2 continued**

| | | | | | | |
|---|---|---|---|---|---|---|
| Goal/task | 7 (4.8) | 40 (27.2) | 60 (40.8) | 23 (15.6) | 6 (4.1) | 3 (2.0) |
| Grades | 23 (15.6) | 44 (29.9) | 45 (30.6) | 17 (11.6) | 7 (4.8) | 3 (2.0) |
| Money | 13 (8.8) | 18 (19.0) | 54 (36.7) | 25 (17.0) | 11 (7.5) | 7 (4.8) |
| School work | 6 (4.1) | 30 (20.4) | 49 (33.3) | 30 (20.4) | 20 (13.6) | 6 (4.1) |
| Housing | 28 (19.0) | 40 (27.2) | 38 (25.9) | 17 (11.6) | 12 (8.2) | 4 (2.7) |
| Noise of other people | 7 (4.8) | 24 (16.3) | 42 (28.6) | 33 (22.4) | 22 (15.0) | 15 (10.2) |
| Oral presentations and public speaking | 14 (9.5) | 38 (25.9) | 46 (31.3) | 24 (16.3) | 12 (8.2) | 3 (2.0) |
| Privacy | 19 (12.9) | 43 (29.3) | 41 (27.9) | 22 (15.0) | 15 (10.2) | 2 (1.4) |
| Lateness of self | 17 (11.6) | 38 (25.9) | 57 (38.8) | 18 (12.2) | 11 (7.5) | 1 (0.7) |
| Professors/coaches | 24 (16.3) | 38 (25.9) | 44 (29.9) | 17 (11.6) | 13 (8.8) | 4 (2.7) |
| Roommates/housemates relationships issues | 21 (14.3) | 35 (23.8) | 46 (31.3) | 20 (13.6) | 12 (8.2) | 7 (4.8) |
| Waiting | 12 (8.2) | 41 (27.9) | 38 (25.9) | 25 (17.0) | 10 (6.8) | 13 (8.8) |

Looking at Table 2, both diploma and undergraduate nursing students experienced variety of stressors. The prevalent stressors identified were as follows; 61.9% of the participants identified examinations caused stress often to extremely often. Fifty-six point four percent reported getting up early caused stress often to extremely often, while 47.6% reported noise of others caused stress often to extremely often. It was however interesting to note that grades was not one of their top stressors. Seventy-six point one percent occasionally do never felt grades caused stress.

**Factor Analysis**

Factor analysis is a statistical method for data reduction. It is done to group variables that are strongly related to a single factor for a common description. This study used factor analysis to identify and describe the stressors the participants had reported to have experienced in their nursing education both at diploma and undergraduate level. The students' stressors were reduced to four as follow; Hassels, Identity struggle, Life choices and Emotional adjustment.

**Table 3**

***KMO and Bartlett's Test***

| | | |
|---|---|---|
| Kaiser-Meyer-Olkin Measure of Sampling Adequacy | | 0.770 |
| Bartlett's Test of Sphericity | Approx. Chi-Square | 1456.720 |
| | df | 630 |
| | Sig. | 0.000 |

Before the exploratory analysis, Kaiser-Meyer-Olkin (KMO) and Bartlett's sphericity tests were used to measure the sampling adequacy. The results showed that the KMO value was 0.770 and the significance of Bartlett's sphericity ($P$ = 0.000) indicating that the sample met the criteria for factor analysis (Hair et al., 1998). Principal component factor analysis was performed using varimax rotation with Kaiser Normalization.

**Table 4**

***11-factor Variance Explained***

| Factor Label | Eigen value | Variance Explained | Cumulative Percentage % |
|---|---|---|---|
| 1 | 9.828 | 27.299 | 27.299 |
| 2 | 2.893 | 8.037 | 35.337 |
| 3 | 2.072 | 5.756 | 41.093 |
| 4 | 1.932 | 5.367 | 46.460 |
| 5 | 1.731 | 4.808 | 51.268 |
| 6 | 1.407 | 3.909 | 55.177 |
| 7 | 1.275 | 3.541 | 58.718 |
| 8 | 1.197 | 3.325 | 62.042 |
| 9 | 1.176 | 3.266 | 65.308 |
| 10 | 1.110 | 3.084 | 68.393 |
| 11 | 1.005 | 2.792 | 71.184 |

The Table 4 shows that the factor analysis yielded 11-factor solution with an explained variance of 74.18%. Each factor had Eigen values greater than 1.00. To more efficiently define the composition of the eleven factors, items that did not load strongly or cleanly on a single factor were ignored. The first factor was the most important a accounting for 27.229% of the changes in the variables. The second factor explained 8.037% of the remaining variation in the variable. The third and the fourth factors explained an average of 5% of the remaining variation in the variable. Factor five explained 4.808% of the remaining variation in the variable. The remaining five factors, each explained 3% of or less of the remaining variation in the variable.

Factor analysis yielded a-11 factor solution with an explained variance of 71.18%, which had Eigen values greater than 1.00. To more efficiently define the composition of the eleven factors, items that did not load strongly or cleanly on a single factor were eliminated.

**Table 5**

***Factor Loading and Factor Structure of Stressors***

| | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| 28. School work | 0.681 | | | |
| 25. Goal/task | 0.661 | | | |
| 8. Crowd/Large Social Group | 0.635 | | | |
| 13. Exercising | 0.623 | | | |
| 19. Food | 0.619 | | | |
| 26. Grades | 0.618 | | | |
| 6. Bills & Expenses | 0.599 | | | |
| 21. Friends & Peers | 0.582 | | | |
| 15. Family Obligations | 0.574 | | | |
| 18. Fitness | 0.464 | | | |
| 11. Extra curriculum groups | 0.434 | | | |
| 14. Facilities | 0.428 | | | |
| 16. Family relationship issues | 0.104 | | | |
| 22. Future plans | 0.131 | | | |
| 20. Forgetting to do things | | 0.457 | | |
| 4. Mistakes of self | | 0.404 | | |
| 7. Boredom | | 0.315 | | |
| 9. Dating | | | 0.476 | |
| 3. Appearance of self | | | 0.453 | |
| 23. Getting up early | | | 0.296 | |
| 5. Athletic activities of self | | | | 0.562 |
| 2. Annoying behaviour of self | | | | 0.481 |
| 1.Annoying social behaviour of others | | | | 0.305 |
| 10. Environment | | | | 0.213 |

According to the Scree Plot (Appendix H), the slope of the curve became emergent at the seventh point, and factors 8 through 11 only contributed 2.79% of the accumulated variance. However, after the factor loading, only four factors emerged and were classified as seen in Tables 5 and 6.

Factor 1 was Hassles (Table 6). This was the strongest factor, explaining the greatest percentage of variance (27.29%) of the stressors. Items loading on this factor included fourteen items: school work, goal/task, crowd, large social group, exercising, food, grades, bills and expenses, friends, peers, family obligations, fitness, extra curriculum groups, facilities, family relationship issues and future plans. Factor 2 was Identity Struggle and included the following three items: forgetting to do things, mistakes of self and boredom. Factor 3 was Life Choices, included three items: dating, appearance of self and getting up early. Factor 4 was Emotional Adjustment and included the following three items: athletic activities of self, annoying social behaviour of others and environment.

**Table 6**

***Total Variance Explained by Four Factors of Stressors***

| Factor | Factor Label | Eigen value | Variance Explained | Cumulative Percentage % |
|---|---|---|---|---|
| 1 | Hassles | 9.828 | 27.299 | 27.299 |
| 2 | Identity Struggle | 2.893 | 8.037 | 35.337 |
| 3 | Life Choices | 2.072 | 5.756 | 41.093 |
| 4 | Emotional Adjustment | 1.932 | 5.367 | 46.460 |

**Table 7**
***Level of Stress***

| | Not at all N(%) | Mild N(%) | Moderate N(%) | Severe N(%) | Extreme N(%) |
|---|---|---|---|---|---|
| Annoying social behaviour of others | 17(11.6) | 65(44.2) | 35(23.8) | 7(4.8) | 5(3.4) |
| Annoying behaviour of self | 21(14.3) | 69(46.9) | 38(19.0) | 6(4.1) | 2(1.4) |
| Appearance of self | 45(30.6) | 47(32.0) | 24(16.3) | 9(6.1) | 5(3.4) |
| Mistakes of self | 40(27.2) | 51(34.7) | 30(20.4) | 9(6.1) | 2(1.4) |
| Athletic activities of self | 31(21.1) | 58(39.5) | 33(22.4) | 9(6.1) | 2(1.4) |
| Bills and Expenses | 21(14.3) | 45(30.6) | 37(25.2) | 21(14.3) | 7(4.8) |
| Boredom | 30(20.4) | 56(38.1) | 32(21.8) | 13(8.8) | 1(0.7) |
| Crowd and large social group | 44(29.9) | 46(31.3) | 32(21.8) | 8(5.4) | 5(3.4) |
| Dating | 31(21.1) | 53(36.1) | 26(17.7) | 15(10.2) | 4(2.7) |
| Environmental | 9(6.1) | 58(39.5) | 40(27.2) | 20(13.6) | 4(2.7) |
| Extra curriculum groups | 19(12.9) | 43(29.3) | 47(32.0) | 15(10.2) | 9(6.1) |
| Exams | 12(8.2) | 26(17.7) | 53(36.1) | 22(15.0) | 21(14.3) |
| Exercising | 25(17.0) | 53(36.1) | 35(23.8) | 19(12.9) | 6(4.1) |
| Facilities | 19(12.9) | 49(33.3) | 29(19.7) | 23(15.6) | 18(12.2) |
| Family obligations | 25(17.0) | 52(35.4) | 25(17.0) | 17(11.6) | 8(5.4) |
| Family relationships issues | 26(17.7) | 53(36.1) | 34(23.1) | 17(11.6) | 5(3.4) |

**Table 7 continued**

| | | | | | |
|---|---|---|---|---|---|
| Fear of physical safety | 33(22.4) | 49(33.3) | 25(17.0) | 22(15.0) | 8(5.4) |
| Fitness | 28(19.0) | 56(38.1) | 40(27.2) | 9(6.1) | 4(2.7) |
| Food | 26(17.7) | 46(31.3) | 33(22.4) | 22(15.0) | 8(5.4) |
| Forgetting to do things | 29(19.7) | 56(38.1) | 33(22.4) | 11(7.5) | 6(4.1) |
| Friends and peers | 13(8.8) | 57(38.8) | 45(30.6) | 12(8.2) | 5(3.4) |
| Future plans | 19(12.9) | 43(29.3) | 46(31.3) | 16(10.9) | 12(8.2) |
| Getting up early | 12(8.2) | 40(27.2) | 39(26.5) | 26(17.7) | 13(8.8) |
| Girl/boy friend relationship | 38(25.9) | 40(27.2) | 35(23.8) | 8(5.4) | 7(4.8) |
| Goal/task | 18(12.2) | 50(34.0) | 54(36.7) | 13(8.8) | 2(1.4) |
| Grades | 28(19.0) | 46(31.3) | 41(27.9) | 9(6.1) | 10(6.8) |
| Money | 17(11.6) | 52(35.4) | 47(32.0) | 9(6.1) | 11(7.5) |

**Table 7 Continued**

| | | | | | |
|---|---|---|---|---|---|
| School work | 17(11.6) | 42(28.6) | 48(32.7) | 18(12.2) | 11(7.5) |
| Housing | 36(24.5) | 46(31.3) | 34(23.1) | 12(8.2) | 8(5.4) |
| Noise of other people | 17(11.6) | 34(23.1) | 44(29.9) | 24(16.3) | 18(12.2) |
| Oral presentations and public speaking | 22(15.0) | 59(40.2) | 33(22.4) | 10(6.8) | 8(5.4) |
| Privacy | 26(17.7) | 55(37.4) | 36(24.5) | 10(6.8) | 7(4.8) |
| Lateness of self | 24(16.3) | 54(36.7) | 43(29.3) | 10(6.8) | 8(5.4) |
| Professors/coaches | 27(18.4) | 43(29.3) | 37(25.2) | 16(10.9) | 8(5.4) |
| Roommates/housemates relationships issues | 24(16.3) | 47(32.0) | 33(22.4) | 18(12.2) | 10(6.8) |
| Waiting | 19(12.9) | 54(36.7) | 29(19.7) | 14(9.5) | 16(10.9) |

**Scale:**

Not at all = 0 Moderate = 2 Extreme = 4

Mild = 1 Severe = 3

Describing the level of stress, participants reported of higher stress levels of severe to extreme. Examination caused severe to extreme stress for 29.3%. Grades caused severe to extreme stress for 12.9%, noise of others caused severe to extreme stress for 28.5%.

**Research Question 2: Is there a relationship between level of stress and self-reported academic performance?**

To answer the research question, Pearson's Chi-Square test was performed with the following values as showed in Table 8 below.

**Table 8**

***Pearson's Chi-Square Test***

| | **Value** | **df** | ***P* = value** |
|---|---|---|---|
| Pearson Chi-Square | 8.552 | 4 | 0.073 |

The Chi-Square test at 95% confidence interval showed chi-value of 8.552, df = 4 and $P = 0.073$. This indicated that there is no significant statistical evidence to conclude that self-reported academic performance were dependent on stress levels.

**Research Question 3: Is there a difference in causes of stress between diploma and undergraduate nursing students?**

To compare the cause of stress between the diploma and the undergraduate nursing students, independent sample t-test was run. The results are presented in Table 9.

**Table 9**

***Sample Characteristics***

| | **Education** | **N** | **Mean of Respondents** | **SD** |
|---|---|---|---|---|
| Stress Measurement | Diploma | 50 | 13.4200 | 8.85505 |
| | Degree | 97 | 14.9072 | 9.31965 |

The sample characteristics of study participants and other related data were presented in Table 9 using simple independent sample t-test. Fifty out of 66 diploma nursing students responded which gave a mean of 13.4200 and a standard deviation (SD) of 8.85505. The undergraduate nursing students, 97 out of 104, responded to the questionnaire with a mean of 14.9072 and a SD of 9.31965. This indicated that the undergraduate nursing students had slightly higher stress levels. Statistically, the mean of the stress levels of both research groups were similar. This was an indication that both nursing groups had common stress levels and very similar stressors.

**Table 10**

***Independent Sample t-test***

| | | Levene's Test for Equality of Variances | | t-test for Equality of Means | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | 95% Confidence Interval of the Difference | |
| | | F | Sig. | t | df | *P* = value | Mean Difference | SD | Lower | Upper |
| Level of Stress | Equal variances assumed | 0.000 | 1.000 | -0.932 | 145 | 0.353 | -1.48722 | 1.59564 | -4.64092 | 1.66649 |
| | Equal variances not assumed | | | -0.948 | 103.678 | 0.346 | -1.48722 | 1.56960 | -4.59991 | 1.62548 |

The independent sample t-test was done to determine if there was a significant difference between the mean of the stress levels of the two nursing groups.

Using the Levene's Test for Equality of Variances as shown in Table 10, t = -0.932 with df = 145 and *P* = 0.353. This indicated there was no significant difference between the mean stress levels of the two nursing groups. Thus, diploma and undergraduate nursing students experienced almost the same level of stress during their education.

To test for the generalization of results, one-sample statistics was run with the values as shown in table 11.

**Table 11**

***One-Sample t-test***

| | **n** | **Mean** | **SD** |
|---|---|---|---|
| Stress Measurement Result | 147 | 10.1224 | 7.03309 |

| | **Test Value = 10** | | | | | |
|---|---|---|---|---|---|---|
| | **t** | **df** | ***P* – value** | **Mean Difference** | **95% Confidence Interval of the Difference** | |
| | | | | | **Lower** | **Upper** |
| Stress Measurement Result | 0.211 | 146 | 0.833 | 0.12245 | -1.0240 | 1.2689 |

The mean of the stress levels for the 147 participants was 10, SD = 7.0331, t = 0.211, df = 146, *P* = 0.833. The *P* = 0.833 is an indication that the stress level in the larger Ghanaian population of nursing students, both diploma and undergraduate level, is high. However, looking critically at the standard deviation of 7.03309 compared to the mean of 10.1224 indicates that participants had widely varied stress levels.

**Discussion**

Females were 63.3% of the participants. The most common age group was between 22-25 years with 65.3%. The majority were single (80.3%) and were fresh from second cycle into tertiary institution. Akans formed the majority of 68%. Some of the respondents were foreign students at the University. Considering the most common age group of 22-25 years were from the second cycle, this implies they may still depend on their parents and guardians for financial support. In a situation where the dependency needs are not met but her parents and guardians, it will thus create anxiety in the students leading to stress.

**Research Question 1**: **What are the stressors nursing students experience?**

The present study found a number of stressors nursing students experienced during their education. Using factor analysis, stressors were reduced to four factors which explained the percentage variance; daily hassles (27.29%), life choices (35.33%), identity struggle (41.09%) and emotional adjustment (46.46%). Daily hassles were the main stressor for most nursing students. These daily hassles ranged from school work; goals and tasks; large social groups; and bills and expenses. Stressors of this kind can affect nursing students resulting in

poor academic performance. This finding was expected because previous research identified stressors such as clinical work and pressure of academic work nursing students experience whilst in school (Dusselier et al., 2005). Students have many obstacles to overcome in order to achieve their optimal academic performance (Womble, 2003). University students might experience high stress due to academic commitments, financial pressures and lack of time management skills.

College students experience stress from several sources that include pressure for academic achievement (Dusselier et al., 2005), pressure to change and adapt to the college environment (Misra & Castillo, 2004), and memory impairment (Vondras et al., 2005).

**Research Question 2: Is there any relationship between level of stress and self-reported academic performance?**

The study found no significant statistical evidence to conclude that self-reported academic performance is dependent on stress levels. Though most of the research findings support the negative relationship between stress and academic achievement (Pfeiffer, 2001), a few researches also disagreed with the inverse relationship between stress and academic performance (Pfeiffer, 2001). O'Connor (2003) reported a significant positive relationship between stress and academic performance of college students. Kaplan and Sadock (2000) reported that an optimal level of stress can enhance learning ability. Gelow, Brown, Dowling and Torres (2009) stated that a state of emotional stress was reported to have a significant positive relationship with reported school performance. In another research, Womble (2003) did not find any relationship between perceived stress

and academic achievement of college students. The conceptual framework for this study provides the literature support for this finding. The argument of Self-efficacy and stress are closely related concepts. In Lazarus' cognitive model of stress (Lazarus and Folkman, 1984), personal beliefs such as self-efficacy were crucial in evaluating demands from the environment. Each external demand is evaluated as a threat or a challenge, and persons with high self-efficacy beliefs are more likely to evaluate the demands as a challenge (Chemers, Hu, and Garcia, 2001; Lazarus and Folkman, 1984; Pintrich and De Groot, 1990). That is, the extent to which a person feels confident about his or her competence to handle a given situation affects whether a given task is perceived as stressful or threatening, rather than as a challenge. When a task is appraised as a challenge, one is more likely to select an effective coping strategy and to persist at managing the task

**Research Question 3: Is there difference in causes of stress between diploma and undergraduate nursing students?**

Using the simple independent sample t-test (Table 10), the findings revealed undergraduate nursing students have slightly higher stress levels (9.31%) than the diploma nursing students (8.86%) but the mean of these stress levels were similar. This finding indicates that though the stress levels of the undergraduate nursing students were slightly higher than that of the diploma nursing students, both research groups reported similar stressors.

Though the researcher did not come across any comparative literature concerning diploma and undergraduate nursing students and stress levels, there were evidence of stress levels higher in nursing students compared to stress levels of students of other health related fields (Beck & Srivastava, 1997).

# CHAPTER FIVE

# SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

This chapter summarizes the research process used, highlights the main findings, draws conclusion and makes recommendations.

## Summary

This study sought to find out the perceived stress levels of nursing students in the diploma and the undergraduate levels and how these perceived stress levels affected their academic performance. The participants were chosen from Cape Coast Nursing and Midwifery Training College (CCNMTC) and University of Cape Coast (UCC). The participants were all in their final years. The total sample size was 170; however, a total of 147 response rate was realised for a return rate of 86.5%.

This study used a cross-sectional type of design and employed simple random sampling with the lottery method. The instrument used was a modified version of Hassles Assessment Scale, a standardized stress assessment tool originally developed by Sarafino and Ewing (1999). Permission was sought from the head of both institutions before the research was conducted. Additionally, the Institutional Review Board of School of Graduate Studies and Research of University of Cape Coast gave ethical clearance for the research to be carried out. The participants were asked to sign a consent for participating as volunteers. Data was analysed using the SPSS 16$^{th}$ version for composite data, Pearson's Chi-

Square Test to find out the relationship between stress and self-reported academic performance and independent sample t-test to determine the difference in stress levels of the diploma and the undergraduate nursing students.

The key findings were:

1. The majority (80.3%) were not married and 87.8% did not have children. Majority of the respondents (72.1%) lived in school hostels.
2. Females reported higher stress levels than their male counterparts.
3. The study identified student stressors that included daily hassles, identity struggles, life choices and emotional adjustment.
4. Daily Hassels were the most common stressor to nursing students.
5. There was no significant statistical evidence to suggest that self-reported academic performance was dependent on the stress levels of the nursing students.
6. There was no significant difference between the causes of stress of the diploma and the undergraduate nursing students

**Conclusion**

Stress is a common element in the lives of every individual, regardless of race or cultural background. Over the past few decades, there has been significant investigation on the issues of stress and management of stress. In addition, college students have been shown to possess a unique set of stressors which can affect their daily experiences.

College is an environment that places demands upon students to adapt. If individuals believe they cannot meet demands, they might experience stress that may result in lowered self-esteem, poorer health habits, poorer self-management choices, impaired information processing and impaired memory

Academic stress is best understood with respect to how individual students react to stress. Some students presumably cope with stress more effectively than others. A factor that may mediate stress is an individual's attachment to another adult who provides advice, counsel, or comfort

Besides, in this study, among the findings it was found out that nursing students experience stress which were caused by daily hassels and the struggle to achieve academic success. Tough participants reported of higher stress levels, there were not significant statistical evidence to suggest that the effects of perceived stress levels on academic performance was dependent on the actual stress levels of the nursing students.

Finally, there was no significant difference between the average stress levels of the diploma and the undergraduate nursing students.

**Recommendations**

**Practice**

1. Mentorship should be encouraged at the clinical sites to facilitate easy learning.
2. Authorities of nursing schools should prevail on the Ghana government to sustain the allowances and loans of nursing students. This will help reduce their financial stress, hence, improving the students' academic performance.

3. Parents and guardians should continue to support their wards physically, financially and emotionally to help reduce their stress levels.

**Education**

1. Faculty members need to be more sensitive to the needs of their students, listen carefully, and respond with proactive steps to help parents.
2. Nursing students would need counsellors to provide a wider range of services for all, not just acutely troubled ones.
3. Curriculum for teaching nursing students should be more student-centred to address their academic challenges.

**Research**

1. Repeating this study in other public and private nursing schools is recommended to help:
    a. add more information to existing literature.
    b. address findings that come up consistently.
2. Further research in this area should employ two intervals for data gathering. Thus, at the beginning and the end of the semester.

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## APPENDIX A

## Ethical clearance

# UNIVERSITY OF CAPE COAST

## Institutional Review Board
## School of Graduate Studies and Research

TELEPHONE: +233 42 32440-9 & 32480-9 Ext. 237
DIRECT: +233 42 35351 & 028 9670793(4)

TELEGRAM: UNIVERSITY, CAPE COAST.

C/O UNIVERSITY POST OFFICE
CAPE COAST, GHANA

Our Ref: UCC/IRB/4^
Your Ref:

23th May, 2014

Mr. Budu Isaac Hayford
Department of Nursing
Ankaful Nurses Training College
P.O. Box 1056
Cape Coast

**ETHICAL CLEARANCE –ID NO: UCCIRB: 23/05/14 (3)**

The University of Cape Coast Institutional Review Board (UCCIRB) has granted **Provisional Approval** for implementation of your research protocol titled:

**"Stressors Nursing Students Experience during their Education College and University: A Study at Central Region, Ghana."**

This approval requires that you submit periodic review of the protocol to the Board and a final full review to the UCCIRB on completion of the research. The UCCIRB may observe or cause to be observed procedures and records of the research during and after implementation.

Please note that any modification of the project must be submitted to the UCCIRB for review and approval before its implementation.

You are also required to report all serious adverse events related to this study to the UCCIRB within seven days verbally and fourteen days in writing.

Always quote the protocol identification number in all future correspondence with us in relation to this protocol

.....
(Joseph C. Sefenu)
ADMINISTRATOR

cc: The Chairman, UCCIRB

## APPENDIX B

## Letter of introductory and consent

# UNIVERSITY OF CAPE COAST

## INSTITUTIONAL REVIEW BOARD

### INFORMED CONSENT FORM

**TITLE:Stressors Student Nurses Experience during their education at College and University: A Study in the Central Region, Ghana.**

**PRINCIPAL INVESTIGATOR:Budu Isaac Hayford**

**ADDRESS:Ankaful Nurses Training College, P. O. Box 1056, Cape Coast.**

Dear Sir/Madam

**LETTER OF INTRODUCTION AND CONSENT**

This study seeks to find out the stressors student nurses experience during their training at College and University. I am by this letter inviting you to participate as a research assistant who will be assisting in data collection. The interaction will last for two hours a day for 2 days. Your transportation and lunch will be taken care of. The study will involve student nurses responding to a questionnaire as a checklist.

To have access to the respondents, a letter will be written to seek permission to carry out the research on the final year student nurses of Nursing and Midwifery College, Cape Coast and University of Cape Coast respectively. Approval to embark on the study will pave way for selection of the respondents from each school.

The type of questions that the participants will respond to include; Personal data, their Understanding of stressors, Consequences of stress, Relationship between stress and academic performance, Treatment of stress. You are to read the questions and respond accordingly. You can skip a question that you would not like to respond to. The information provided is considered confidential and will not be available to anyone except Budu Hayford and his research assistant. The expected duration for the questionnaire is about 20 – 30 minutes. The study will help to identify the stressors student nurses experience their education which the findings will help address by relevant authorities.

We will protect information about our participants to the best of our ability. Participants will not be required to provide any address, contact numb or name for any reference.

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**APPENDIX C**

**UNIVERSITY OF CAPE COAST**

**School of Biological Sciences**

**Department of Nursing**

*This research is being carried out to assess the stressors student nurses' experience during their education at the University or College.*

You are kindly requested to respond to the items in this questionnaire as accurately as possible. This will only take a few minutes of your time to complete. Your response will be held in strict confidence.

**Instruction: kindly tick (√) or provide answers where applicable.**

**Section A**

Biographical Data

1. What gender are you?
a. Male ☐
b. Female ☐

2. How old are you?
a. 18 – 21 ☐
b. 22 – 25 ☐
c. 26 – 29 ☐
d. 30 – 33 ☐
e. 34 – 37 ☐
f. 38 or older ☐

3. Marital status
a. Single ☐
b. Co - habitation ☐
c. Married ☐
d. Separated ☐

e. Divorced
f. Others, specify

4. Number of children
a. 0
b. 1
c. 2
d. 3
e. 4 or more

5. What is your ethnicity?

   Please state below……

6. Which local dialects do you speak?
   ……

7. Where is your resident?
a. School Hostel
b. Private Hostel

8. What is your religion?
a. Christianity
b. Islam
c. Traditionalist
d. Others specify

## SECTION B
## Stress Inventory

| **Event**<br>**How often do you experience……**… | **How Often Occurs**<br>0 = never<br>1 = rarely<br>2 = occasionally<br>3 = often<br>4 = very often<br>5 = extremely often | | | | | | **Unpleasantness Caused**<br>0 = not at all<br>1 = mild<br>2 = moderate<br>3 = very often<br>4 = extreme | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.Annoying social behaviour of others (e.g., rude, inconsiderate, sexist/racist) | 0 | 1 | 2 | 3 | 4 | 5 | 0 | 1 | 2 | 3 | 4 |
| 2.Annoying behaviour of self (e.g., habits, temper) | 0 | 1 | 2 | 3 | 4 | 5 | 0 | 1 | 2 | 3 | 4 |
| 3.Appearance of self (e.g., noticing unattractive features, grooming) | 0 | 1 | 2 | 3 | 4 | 5 | 0 | 1 | 2 | 3 | 4 |
| 4.Accidents/clumsiness/mistakes of self (e.g., spilling beverage, tripping? | 0 | 1 | 2 | 3 | 4 | 5 | 0 | 1 | 2 | 3 | 4 |
| 5.Athletic activities of self (e.g., aspects of own performance, time demands) | 0 | 1 | 2 | 3 | 4 | 5 | 0 | 1 | 2 | 3 | 4 |
| 6.Bills/overspending: Seeing evidence of | 0 | 1 | 2 | 3 | 4 | 5 | 0 | 1 | 2 | 3 | 4 |
| 7.Boredom (e.g., noting to do uninteresting) | 0 | 1 | 2 | 3 | 4 | 5 | 0 | 1 | 2 | 3 | 4 |
| 8.Crowds/large social groups (e.g., at parties, while shopping) | 0 | 1 | 2 | 3 | 4 | 5 | 0 | 1 | 2 | 3 | 4 |
| 9.Dating (e.g., noticing physical living or working conditions) | 0 | 1 | 2 | 3 | 4 | 5 | 0 | 1 | 2 | 3 | 4 |
| 10. Environmental (e.g., noticing physical living or working conditions | 0 | 1 | 2 | 3 | 4 | 5 | 0 | 1 | 2 | 3 | 4 |
| 11. Extracurricular groups (e.g., activities, responsibilities) | 0 | 1 | 2 | 3 | 4 | 5 | 0 | 1 | 2 | 3 | 4 |
| 12. Exams (e.g., preparing for, taking) | 0 | 1 | 2 | 3 | 4 | 5 | 0 | 1 | 2 | 3 | 4 |
| 13. Exercising (e.g., unpleasant routines, time to do ) | 0 | 1 | 2 | 3 | 4 | 5 | 0 | 1 | 2 | 3 | 4 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 14. Facilities/resources unavailable (e.g., library materials, computers) | 0 | 1 | 2 | 3 | 4 | 5 | 0 | 1 | 2 | 3 | 4 |
| 15. Family: obligations or activities | 0 | 1 | 2 | 3 | 4 | 5 | 0 | 1 | 2 | 3 | 4 |
| 16. Family: relationship issues, annoyances | 0 | 1 | 2 | 3 | 4 | 5 | 0 | 1 | 2 | 3 | 4 |
| 17. Fears of physical safety (e.g., while walking alone or in a car) | 0 | 1 | 2 | 3 | 4 | 5 | 0 | 1 | 2 | 3 | 4 |
| 18. Fitness: noticing inadequate physical condition | 0 | 1 | 2 | 3 | 4 | 5 | 0 | 1 | 2 | 3 | 4 |
| 19. Food ( e.g., unappealing or unhealthful meals) | 0 | 1 | 2 | 3 | 4 | 5 | 0 | 1 | 2 | 3 | 4 |
| 20. Forgetting to do things (e.g., to tape TV show, send cards, do homework) | 0 | 1 | 2 | 3 | 4 | 5 | 0 | 1 | 2 | 3 | 4 |
| 21. Friends/peers: relationship issues, annoyances | 0 | 1 | 2 | 3 | 4 | 5 | 0 | 1 | 2 | 3 | 4 |
| 22. Future plans (e.g., career or marital decisions | 0 | 1 | 2 | 3 | 4 | 5 | 0 | 1 | 2 | 3 | 4 |
| 23. Getting up early (e.g., for class or work | 0 | 1 | 2 | 3 | 4 | 5 | 0 | 1 | 2 | 3 | 4 |
| 24. Girl/boy-friend relationship issues, annoyances | 0 | 1 | 2 | 3 | 4 | 5 | 0 | 1 | 2 | 3 | 4 |
| 25. Goals/task: not completing enough | 0 | 1 | 2 | 3 | 4 | 5 | 0 | 1 | 2 | 3 | 4 |
| 26. Grades (e.g., getting a low grade) | 0 | 1 | 2 | 3 | 4 | 5 | 0 | 1 | 2 | 3 | 4 |
| 27. Money: lack of | 0 | 1 | 2 | 3 | 4 | 5 | 0 | 1 | 2 | 3 | 4 |
| 28. Schoolwork (e.g., working on term papers, reading tedious/hard material, low motivation | 0 | 1 | 2 | 3 | 4 | 5 | 0 | 1 | 2 | 3 | 4 |
| 29. Housing: finding/getting or moving | 0 | 1 | 2 | 3 | 4 | 5 | 0 | 1 | 2 | 3 | 4 |
| 30. Noise of other people | 0 | 1 | 2 | 3 | 4 | 5 | 0 | 1 | 2 | 3 | 4 |
| 31. Oral presentations public speaking | 0 | 1 | 2 | 3 | 4 | 5 | 0 | 1 | 2 | 3 | 4 |
| 32. Noticing lack of privacy | 0 | 1 | 2 | 3 | 4 | 5 | 0 | 1 | 2 | 3 | 4 |
| 33. Lateness of self (e.g., for appointment or class) | 0 | 1 | 2 | 3 | 4 | 5 | 0 | 1 | 2 | 3 | 4 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 34. Professors/coaches (e.g., unfairness, demands of, unavailability) | 0 | 1 | 2 | 3 | 4 | 5 | 0 | 1 | 2 | 3 | 4 |
| 35. Roommate(s) / housemate(s) relationship issues, annoyances | 0 | 1 | 2 | 3 | 4 | 5 | 0 | 1 | 2 | 3 | 4 |
| 36. Waiting (e.g., for appointments, in lines) | 0 | 1 | 2 | 3 | 4 | 5 | 0 | 1 | 2 | 3 | 4 |

## SECTION C

1. When under stress who do you speak to, for help?
   a. Friend ☐
   b. Parents ☐
   c. Religious Leader ☐
   d. Lecturer / tutor ☐
   e. Counselor ☐
   f. Others, Specify _____ ☐

2. What are Stressors?

……..……
……
……
……
……

3. How do you feel when under stress?
   a. Nervous ☐
   b. Anxious ☐
   c. Worry ☐
   d. Sick ☐
   e. Other, please specify _____

4. Why would you not like to discuss your problem with anybody?
   a. Fear of confidentiality ☐
   b. Lack of trust ☐
   c. Fear of embarrassment ☐
   d. Other (please specify)

5. Do you know of counseling services?
   a. Yes ☐
   b. No ☐

6. Do you patronize counseling services in your school?
   a. Yes ☐
   b. No ☐

7. In response to item (6) give reason for your answer

……..……
……

8. How do you feel when you attempt to discuss your problem with others?
a. Anxious ☐
b. Embarrassed ☐
c. Uncomfortable ☐
d. Shameful ☐
e. Stressed ☐
f. Other (s) specify……

9. How helpful do you think having a professional counselor will be?
   a. Not helpful ☐
   b. Somehow helpful ☐
   c. Helpful ☐
   d. Quite helpful ☐
   e. Very helpful ☐

10. How do you think the stressors you experience at the school affect your academic work?
   a. Mildly ☐
   b. Moderately ☐
   a. Severely ☐
   b. Extremely ☐

Thank you for participating in this study.

## APPENDIX D

### Supervisor's Approval

# UNIVERSITY OF CAPE COAST

## DEPARTMENT OF NURSING

Telephone 233-3321-33342 33372
Telex: 2552, UCC GH
Telegrams & Cables: University, Cape Coast
*In case of reply please quote*

Our Ref.: DN/77/Vol.2/154

Your Ref.:

UNIVERSITY POST OFFICE
CAPE COAST, GHANA

29th November, 2013

The Chairman
Institutional Review Board
U. C. C.

Dear Sir/Madam,

**SUPERVISOR'S APPROVAL**

I am Dr. Mate Siakwa of the Department of Nursing, University of Cape Coast, Cape Coast Ghana.

I have been assigned to supervise Mr Budu Isaac Hayford, graduate student at the Department of Nursing. His thesis topic is "Stressors Experienced by student Nurses during their education in College and University: A study in the Central Region, Ghana"

Mr Hayford, has the knowledge and attitude in conducting research at this level.

I have reviewed his protocol document and think the study is well justified. The study will address some gaps in the existing literature.

I would be glad if you could give him the ethical clearance to enable him assemble the necessary data for his research.

Thank you.

Yours faithfully,

Mate Siakwa
BSc Hons, MSc, PhD, Clinical Microbiologist

## APPENDIX E

## Introductory letter


# UNIVERSITY OF CAPE COAST

**DEPARTMENT OF NURSING**

Telephone: 233-3321-33342/33372
Telex: 2552, UCC. GH
Telegrams & Cables: University, Cape Coast
*In case of reply please quote:*
Our Ref.: DN/ 77/Vo.1/156

Your Ref.:

UNIVERSITY POST OFFICE
CAPE COAST, GHANA


20th November, 2013

The Principal
Nursing and Midwifery Training College
Cape Coast

Dear Sir/ Madam,

**INTRODUCTORY LETTER**

Mr. Budu Isaac Hayford is a second year graduate student at the School of Nursing and as part of the programme he is conducting a research for his thesis on the topic "***Stressors Nursing Students Experience during their Education at College and University : A Study at Central Region Ghana* "**

We would be grateful if you could give him all the necessary assistance to enable him assemble the relevant data that he would require for his work.

Thank you.

Yours faithfully

Dr. Mate Siakwa
Head

## APPENDIX F

## VOLUNTEER AGREEMENT

The above document describing the benefits, risks and procedures for the research title *(Stressors Student Nurses Experience during their education at College and University: A Study in the Central Region, Ghana)* has been read and explained to me. I have been given an opportunity to have any questions about the research answered to my satisfaction. I agree to participate as a volunteer.

_____ _____

Date Name and signature or mark of volunteer

**If volunteers cannot read the form themselves, a witness must sign here:**

I was present while the benefits, risks and procedures were read to the volunteer. All questions were answered and the volunteer has agreed to take part in the research.

_____ _____

Date Name and signature of witness

I certify that the nature and purpose, the potential benefits, and possible risks associated with participating in this research have been explained to the above individual.

_____ _____

Date Name Signature of Person Who Obtained Consent

## APPENDIX G

## Application for ethical clearance

University of Cape Coast
School of Biological Sciences
Department of Nursing
Cape Coast
20th November, 2013.

The Chairman
Institutional Review Board of University of Cape Coast
University of Cape Coast
Cape Coast

Dear Sir/Madam,

**APPLICATION FOR ETHICAL CLEARANCE**

I wish to apply for ethical clearance to conduct a study on the topic "Stressors Experienced by student nurses at college and university. A study in the Central Region, Ghana".

I am a second year student offering Master of Nursing at the Department of Nursing. The participants in the study will be Student Nurses in public universities and Nurses training colleges in the Central Region.

All relevant documents have been included for your attention.

Thank you.

Yours sincerely,

.....

Budu Isaac Hayford

## APPENDIX H

### Scree Plot