

KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY,

KUMASI, GHANA

COLLEGE OF HEALTH SCIENCES

SCHOOL OF PUBLIC HEALTH

DEPARTMENT OF HEALTH POLICY, MANAGEMENT AND

ECONOMICS

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**FACTORS AFFECTING PERFORMANCE IN THE
NURSING LICENSURE EXAMINATION AMONG DIPLOMA GRADUATES
IN ASHANTI REGION**



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NOVEMBER, 2015

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**BY
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**A THESIS SUBMITTED TO THE DEPARTMENT OF HEALTH POLICY,
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SCHOOL OF PUBLIC HEALTH, IN PARTIAL FULFILMENT OF THE
REQUIREMENT FOR THE DEGREE OF
MSc. HEALTH SERVICES PLANING AND MANAGEMET**

NOVEMBER, 2015

DECLARATION

I hereby do declare that accept for references to other people's work which have been dully acknowledge, this piece of work is my own composition and neither in whole nor in pact has this work been presented for the award of a degree in this university or else where

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DEDICATION

I dedicate this work to my family and Professor Osbon Oppong Agyemang.

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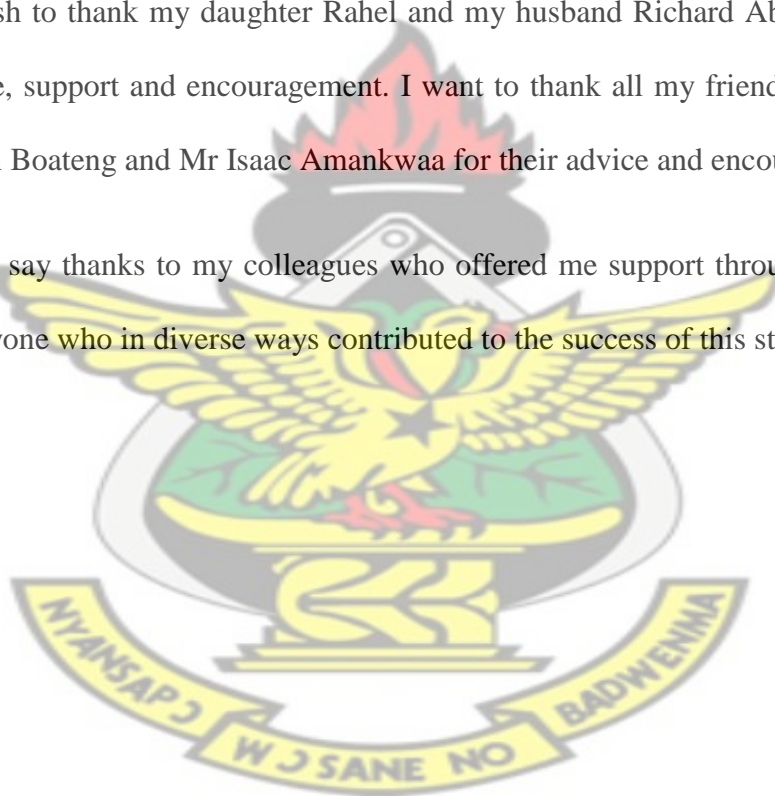


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DEFINITION OF TERMS


Performance: a pass or fail in the NMC-organised licensing examination

Nursing Examination: a licensing examination organised by the Nursing and Midwifery Council (NMC) of Ghana

Diploma Graduates: students who have successfully completed six semesters of organized programme of study and eligible to write the licensing examination.



ABBREVIATION/ ACRONYM



ACT	American College Test
AIDS	Acquired Immunodeficiency Syndrome
GPA	Grade Point Average
HIV	Human Immunodeficiency Virus
ICN	International Council of Nurses
IQ	Intelligence Quotient
JLI	Joint Learning Initiative
KNMTC	Kumasi Nurses & Midwifery Training College
MBBS	Medicine Bachelor, Bachelor of Surgery
NCLEX-RN	National Council Licensure Examination-Registered Nurse
NCTE	National Council for Tertiary Education
NLM	National League for Nursing
NMC	Nursing and Midwifery Council
NMCQE	Nursing and Midwifery Qualifying Examination
NTC	Nursing Training College
NMC-LE	Nursing and Midwifery Training College Licensing Ex
S.D.A.	Seventh-day Adventist
SP	Student Performance
SQ	School Quality
SQI	School Quality Indicators
WHO	World Health Organisation

ABSTRACT

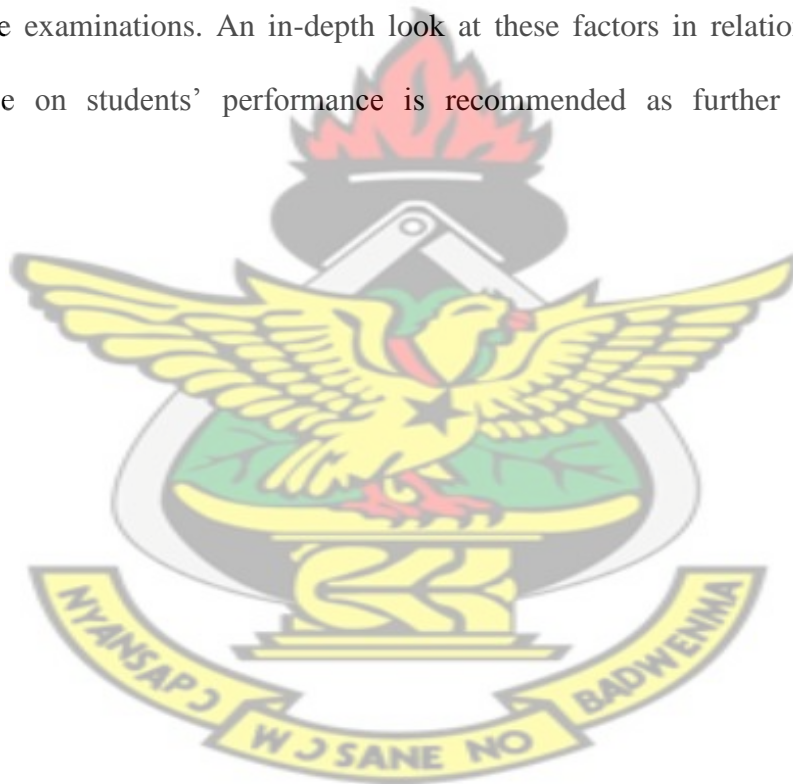
Introduction: Diploma in general nursing programmes are the primary avenues for basic nursing education in Ghana. In recent times, a large number of students who sit for the NMC-organised licensing examination fail on their first attempt. Nursing schools throughout the country are therefore concerned about the poor performance of nursing students in the NMC-organised licensure examination. The purpose of this study was to explore the factors that affect diploma graduates' performance in the Nursing Licensure examination in Ashanti Region.

Methods: This was a cross-sectional descriptive study, which employed quantitative and qualitative methods, was conducted among four (4) nursing training colleges namely S.D.A. Nursing Training College, Agogo Nursing Training College, Premier Nursing Training College and Kumasi Nursing and Midwifery Training College. Purposive and simple random sampling techniques were used to select 440 respondents for the study. These included nursing graduates (428), tutors (8) and principals (4) from the selected institutions. Structured questionnaire and interview guide were used to collect the required data and analyzed to produce the needed results. Data were analysed with SPSS version 22.

Results: The study revealed the existence of students, tutor and environmental related factors that could militate against performance of students in the licensure examinations. They included high level of stress and anxiety among students (53%); anxiety during end of semester examinations (40.5%) poor understanding of content and guidelines for practical lessons (38%); poor supervision of students and tutors unable to complete syllabus (44%). Majority found the time for preparation for the licensure examination too short (64%) and large class size and inadequate skill

laboratories was a common problem among all institutions studied. Student level factors (belonging to a study group, summarizing lecture notes and being punctual in class), school level factors (students having enough time for personal studies, comparability of end of semester examinations to licensing examination and being happy with mock examination in the school) predicted students understanding and appreciation of the nursing programme.

Conclusion: The student, tutor and environment related factors revealed in this study could hamper the smooth academic process and affect students' performance in the licensure examinations. An in-depth look at these factors in relation to their direct influence on students' performance is recommended as further research study.



CHAPTER ONE

INTRODUCTION

1.0 Background to the Study

This is the first of six chapters of the Thesis. It begins with a brief overview of disease burden in Sub-Saharan and its implication for healthcare delivery and human resource supply. A broad picture of Nursing Education in Ghana and the organization of Licensure Examination by the Nursing and Midwifery council are also provided. Astin's Input-Environment-Outcome model that will guide problem statement, study objectives, and research questions will then be presented. The chapter concludes with highlights of how the entire study is organized.

1.1 Current state of knowledge

1.1.1 *Sub-Saharan African Disease Burden and Supply of Health Professionals*

The World Health Organization's 2010 World Health Report found that Africa is responsible for 24% of the global burden of disease but only 3% of the world's healthcare workforce to manage it (WHO, 2010; The World Health Report, 2006 and Warrimhan 2010). In 2010, there was an estimated shortage of at least one million frontline health workers in the developing world. The shortage of health workers, especially Nurses remains a key constraint to scaling up all health services in most poor resource settings.

The WHO lists malaria, tuberculosis, and HIV/AIDS as the major health issues in Ghana (Ghana Health Service, 2012). The burden of these diseases is incredible; over 350,000 people are living with HIV/AIDS in Ghana, there are over 79,000 people living with tuberculosis, and over 3.5 million new cases of Malaria occur annually

(Naicke, 2009). With a population of over 22 million, these health problems plague Ghanaians in alarming numbers.

In view of the chronic nature of some of these conditions, continual monitoring from healthcare professionals especially nurses is necessary (WHO, 2010). However, the human resources available to deal with these health issues are severely depleted, causing many cases to be dealt with at home (Naicke 2005; Zurn 2005). A study conducted by the Joint Learning Initiative (JLI) suggested that, on average, a health worker density (nurses, midwives and physicians) of about 2.5 per 1,000 populations is needed to achieve adequate coverage of services (Munjanja et al, 2005). The average density in Africa is around 1:1,000; the lowest in the world. It is estimated that Ghana has 64 nurses per 100,000 populations (WHO, 2011). This shortage of registered nurses, in combination with increased workload, has the potential to threaten quality of care. Increasing the nurse to patient ratios has been recommended as a means to improve patient safety (Mullan, 2011).

Strengthening health systems is critical for achieving the global aspirations reflected in the Millennium Development Goals and other efforts to improve health outcomes (Travis et al. 2004). Key among the efforts to strengthening health systems is the development of a committed, well prepared, skilled, and knowledgeable public health workforce (United Nation's Millennium Development Goals, 2009). The provision of healthcare in Ghana is not an easy task, as services must combat illnesses associated with poverty and lack of education. Ghana's growing population coupled with inadequate funding and low numbers of resources – both human and material – causes much stress on the healthcare system.

1.1.2 Nursing Education in Ghana

The Development of nursing education in Ghana between 1957 and 1970 was characterized by dynamic changes and growth. Even though the development of nursing as a profession in Ghana is poorly documented, analysis of published manuscripts, personal interviews, and letters helped in understanding the processes that characterised the growth of the profession in Ghana.

Following Ghana's independence in 1957, developments in nursing education continued to be strongly influenced by external organizations and their designated experts. Policies, such as the local training of nurses and Africanization, provided impetus for nurses to further their education to assume senior positions in nursing education and administration. Emphasis on training nurses to work in a hospital based curative health system, which had been the legacy of colonialism, gradually shifted to a broad-based education that prepared nurses to work in a variety of settings.

During the latter part of the 1990's, nursing education had moved from the hospital-based training to institutional education. More Nursing Training Colleges have been established by the Government to increase the number of nurses in the country. Despite the increase in intake at all training institutions in Ghana during the past few years, one problem continually surfaces: there are not enough faculty members to accommodate the rise in students (Akoto, 2011). Training of Nurses has therefore been a major challenge.

1.1.3 Nature, content and framework of licensing examination in Ghana

Simply educating more nurses is not the solution to increasing numbers of nurses in the workforce. In addition to completion of a nursing programme, graduates must pass a qualifying examination for licensure before they are able to practice. The

examination is organized by the Nursing and Midwifery Council of Ghana. The Council has a primary responsibility for establishing, maintaining and supervising the standard of professional Nursing and Midwifery practices in Ghana. The Council supervises the training of Nurses and Midwives in the various nursing and Midwifery training institutions.

It is therefore the mandate of the council to organize the licensure examination for nurses who have just graduated from the various nursing training colleges. The mandate of the council to conduct examinations is derived from the Health Professions Regulatory Bodies Act [Act 857] (Health Professions Regulatory Bodies Act, 2013).

The Nursing and Midwifery Council of Ghana licensure examination (NMC-LE) is of critical importance for nursing graduates, their sponsors, the nursing programme and Colleges of Nursing. The main purpose of the examination is to determine the Diploma of Nursing graduates' minimum competence and preparedness to provide safe and effective nursing care (McDowell, 2008). Success in the licensure examination is therefore the only legal document that allows one to practice as a nurse within and outside Ghana.

Currently, the licensure examination is held biannually; in February and August. The examination has six papers comprising medical and surgical nursing; mental health nursing; paediatric nursing, public health nursing and obstetric nursing. Every student pursuing nursing must meet the standards of the NMC by passing each of the six examination papers with a minimum of 50% to be eligible for professional registration by the Nursing Council of Ghana. Failing in any paper means that the candidate must pay the full fees again to retake the examination when next offered. A

student who fails to pass all the papers in his/her first attempt will have only two more chances to retake the examination. Failing to pass the papers in the two subsequent attempts will mean the student will forever be banned from writing the council examination.

1.1.4 Performance of Students in Licensure Examination

In recent times, a large number of students who sit for the NMC-organised licensing examination fail on their first attempt (NMC Research Report, 2013).

With a national average of 50% pass rate, governmental efforts at producing quality nurses to address key areas of the millennium development goals appear to be threatened. For example, only 51.8% of the 2439 candidates who wrote the licensure examination in 2013 passed. Even though this represents about 1.8% improvement over the previous years, the situation is still unacceptable. The situation is quite pronounced in Ashanti region where only 43.7% of the 437 students presented for the licensure examination passed. One school in fact had 100% of students failing in the examination (NMC examination report, 2013). In comparison with the USA, about 15% of nursing graduates taking the licensure examination for the first time fail while the national average success rate is 84.43% (RCN, 2012).

Factors contributing to this poor academic performance are however poorly defined in Ghana. These factors may be student-related, school-related or exam-related (Tomul, 2013). Failure to understand these factors will prevent the design of remediating interventions to help students who are at risk of failing the licensing examination. However, there seems to be little or no empirical evidence of the factors that precipitate the high NMC-LE failure rate. The empirical evidence is needed to inform policy to address the current unacceptable failure rate.

1.2 Problem Statement and Rationale for the Study

While many students compete aggressively to enter into nursing schools, those who succeed have no guarantee they will be successful in their licensure examination. Success in licensing examination had been one of the most widely used indicators of nursing programme quality. Failure of the licensing examination not only limits the supply of nurses, but also causes emotional and financial hardships for the graduate (Poorman& Webb, 2000). The present mass failure may stand in the way of achieving key public health policies like reducing child and maternal mortality, increasing vaccine coverage and battling epidemics like HIV/AIDs. This situation will prevent the achievement of the United Nations millennium development goals (MDGs). It is therefore imperative to understand the factors that predict successful outcomes in nursing licensure examination.

Unfortunately, factors contributing to this poor academic performance are poorly unearthed. These factors may be student-related, school-related or exam-related. Helping students prepare for NMC-LE must be an integral part of a programme's educational plan. Failure to pass the licensing exams delays entry into the work force and causes financial and emotional distress on the applicant. Because of the value placed on success on NMC-LE for both the student and the programme, it is imperative that nurse educators determine predictors of success prior to graduation and candidacy (Humphreys, 2008).

Failure to understand these factors will prevent the design of remediating interventions to help students who are at risk of failing the licensing examination. It is in the light of this that the current study had been designed to systematically identify factors that influence student failure. The study results will help plan remediation strategies to

support at-risk students. This will help improve the pass rate; helping to solve nursing shortage in Ghana.

1.3 Study Questions

- i. To what extent do student-related factors influence student performance?
- ii. How adequate is the students' learning environment in supporting teaching and learning?
- iii. To what extent do tutor-related factors affect student's learning outcomes?
- iv. How does students' background and prior admission characteristics influence academic performance

1.4 Objectives of the Study

The study was informed by its general and specific objectives as follows.

1.4.1 General Objective

The study sought to establish the factors affecting the diploma graduates performance in the Nursing Licensure examination in Ashanti Region.

1.4.2 Specific Objectives

Specifically, the study was to:

1. Assess student-related factors and their effect on student performance;
2. Examine adequacy of student's learning environment in supporting teaching and learning;
3. Determine tutor-related factors that impact on student's performance;
4. Ascertain the influence of background and prior admission characteristics on student academic performance.

1.5 Significance of the Study

The results of this research study will provide a broader understanding of factors influencing student performance in diploma nursing programmes. While the findings may be most pertinent and significant for the diploma nursing education programme, that is, the setting for the study, there are also important personal, institutional, and societal implications.

Those who are likely to benefit from this study include students, faculty, administrators, future employers, and the public who will become the recipients of nursing care. The study findings would be of particular interest to the Nurse educators at the four (4) Nursing Training Colleges used for this study.

Nursing educators and Principals who are serving on the Admissions Committee will benefit from the findings of this study in terms of identifying student attributes that are predictive of success and retention in the nursing programme. Admission policies can be evaluated and revised as needed to incorporate student characteristics that are associated with success and timely graduation. Through the identification of factors that are predictive of early student success and programme completion, it is possible to determine which students may be at risk of academic difficulty in the first two semesters of the nursing programme and those who may be at risk of delayed graduation or attrition. Because these factors are known either on admission or within the first few days of the nursing programme, at-risk students can be identified early. They can be counseled and supported to promote academic success and to increase the likelihood that they will graduate at the end of six semesters with their admitting class. Findings of the study have implications for the design of interventions to promote student success in Licensure Examination.

The findings of this study will provide the Nursing and Midwifery Council for Ghana with a greater understanding of variables that are associated with academic success. This information can be utilized in evaluating and revising nursing curriculum and educational practices to more effectively meet student needs. Although the investigation is confined to four (4) Nursing Training Colleges and the findings may be institution-specific, other nursing programmes with similar characteristics may find the results useful. Factors that are identified as indicative of academic success are likely to be similar and applicable in other similar nursing programmes.

Additionally, the findings of this study may prompt other nursing programmes to examine the factors that are predictive of academic success and programme completion. As more studies are conducted across other nursing programmes, findings can be compared and possible trends identified. This may result in sharing of ideas and strategies to enhance student success in nursing education programmes.

There is significance of the study for potential employers, and to the public, in general, related to concerns about the nursing shortage and nursing competence. Students who are at risk of having academic difficulty can be identified and counseled early so that they are more likely to complete the programme within two years, graduate, and enter the practice arena, thus, contributing to the nursing workforce

1.6 Delimitations

This study was limited to four (4) Nursing training schools in the Ashanti Region, namely SDA Nurses' and Midwifery Training College, Agogo Presbyterian Nurses' Training College, Komfo Anokye Nurses' Training College, and Premier Nurses' Training College. The study was also limited to only diploma in general nursing students and therefore excluded midwifery, community health and degree nursing

students. The scope of this study was again limited to factors relating to the students and their respective institutions and not that of the Nursing and Midwifery Council and how they conduct examinations. The study included only students who successfully graduated from their respective institutions in 2013.

1.7 Limitations

The researcher anticipated several limitations that should be taken into consideration when interpreting the findings of this study. The study was limited to four (4) Nursing Training Schools in the Ashanti Region. The limited area of the study could threaten the generalizability of the findings. Since questionnaires were distributed to students who were allowed to fill them at their convenience, the researcher anticipated that some students may have been influenced by their colleagues in filling them. Principals and tutors who were sampled purposively may have covered up some practices that they may have found self-incriminating.

In using a non-experimental research design, the researcher understood that a major disadvantage was that the results obtained and the relationship between dependent and independent variable could never be absolutely clear and error free (Creswell, 2009). The selection of study participants that was purely based on their completion of the nursing programme excluded current or continuous students. There may therefore be other factors peculiar to students currently in school that may not have been captured by this study. It was further anticipated that getting all students who had graduated and now working or waiting to write a licensing examination was difficult to track and interview. This may have limited the availability of all cohorts to take part in the study.

1.8 Conceptual Framework

The researcher used Astin's (1994) Inputs-Environments-Outcomes (I-E-O) framework in determining factors that influence student performance (see figure 1.1 below). In his model, Astin explained three elements: Inputs, Environments and Outcomes (I-E-O). Inputs in Austin's model refer to the characteristics of the student at the time of entry in college. Input measurements include standardized test scores such as SSSCE and WASSCE, test taking strategies, time management skill and other demographic variables (gender, ethnicity, socio-economic status, career choice, subjects taken in high school, and religion).

On the other hand, environmental measures refer to programmes, policy, faculty, peers, and educational experiences the student is exposed to during college. Environment measures include institutional characteristics, student peer group and faculty characteristics, curricular measures, and measures of involvement in educational activities.

Outcomes refer to the student's characteristics after exposure to the environment. Student characteristics are described by type of outcomes (affective or cognitive) and type of data. Examples of cognitive psychological outcomes include knowledge, critical thinking and academic achievement (pass/fail in licensure examination)

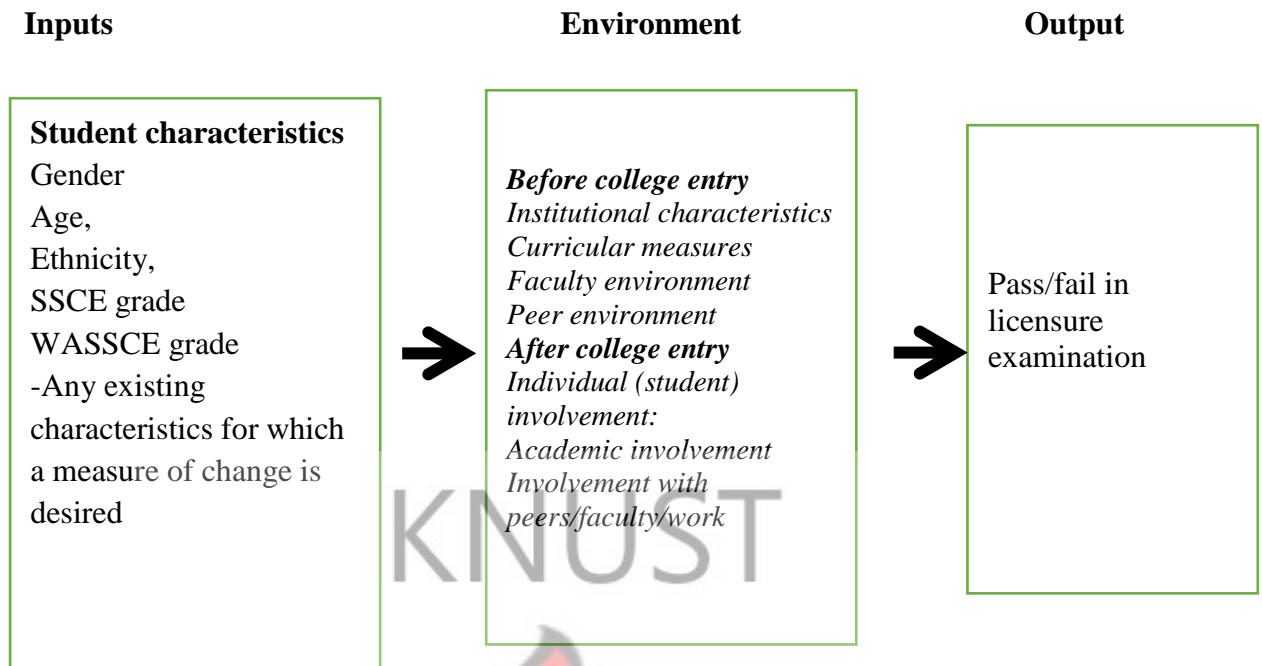


Figure 1.1: Astin's Theory of Involvement: Inputs-Environments-Outcomes Model
(Astin, 1993).

1.9 Operational Definition of Terms

The following terms are defined for interpretation of their use in this study:

Diploma in nursing programme: an organized programme of study, with a minimum of 6 semesters, regulated by the Nursing and Midwifery Council of Ghana that leads to the award of diploma certificate.

Licensure examination is the national nursing examination developed by NMC-Ghana, to measure the competencies of an entry-level registered nurse necessary to practice safe, effective care.

Success in Licensure examination: a student who obtains a pass grade or better in all the six subjects of the NMC-organized examination.

Failure in licensure examination: a student who fails to obtain the pass mark in at least one of the six subjects

Student-related factors: denotes any characteristic of the student such as note taking skills that holds the potential of influencing his/her performance

School-related factors: is any condition in the student environment, such as classroom size, that poses a high probability of affecting student academic performance.

Internal and external examination: examination is a formal test of a person's knowledge or proficiency in a subject or skill. Internal examination if seen in this study will therefore mean any form of examination organized within the institution whereas external examination will be the examination organized by the NMC

1.10 Organization of the Study

Chapter one provides an overview of the entire research work. The chapter introduces the background of the study, the problem statement, leading research questions, objectives of the study, justification of the study.

Chapter two reviews literature on existing studies that have been conducted in the area of student performance in licensure examination; utilization relevant theoretical framework to identify evidence research gaps and weaknesses in research design

Chapter three constitutes the methodology, which discusses the methodological foundation and data analysis techniques that are used to analyze the problems stated to achieve the objective. These include sampling, the methods used for data collection, and procedure for data analysis. The study area is also introduced in this chapter.

Chapter four is devoted to presentation of results. Summary statistics of the variables used in the study are presented and discussed. The **chapter five** presents the discussion of the results of the study. The final **chapter (six)** presents conclusions and recommendations.

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CHAPTER TWO

LITERATURE REVIEW

2.0 Overview of Chapter

In this chapter review of literature that is relevant to factors that influence the performance of nursing students in professional examinations is presented. Reviewing the literature oriented the study to what has already been done and the gaps in knowledge about the topic. The purpose of literature review was also to explore what has been studied, the gaps in the studies, how dependable the studies are and to present the findings of what has been studied (Polit, 2010). For organizational purposes the review of literature explored several aspects of students' particularly nursing students' potential to learn which includes memory, cognition, intelligence and meaningful learning. The literature review is in line with Astins (1994) conceptual model of input-environment-output. The review further discusses student-related factors and environmental variables that influence student learning. Due to the dearth of primary studies on this topic in Ghana, the research relied on studies conducted mainly in the United States where literature on the subject matter abounds to inform the review. The term NCLEX-RN (National Council Licensure Examination for Registered Nurses) is therefore used in place of NMC-LE.

2.1 Learning Potential: Memory, Cognition, Intelligence

Neurophysiologically, memory is described as a process of storing what is learned that results in structural and chemical changes in the brain (Widmaier, Raff, & Strang, 2003). Though poorly understood, the neurophysiology of learning commences with a sequence of events that occur at the same time in several areas of the nervous system. Thoughts are initiated by sensory stimuli which are transformed into an electrical

impulse that is conducted along neurons with the help of neurotransmitters. The stimulus is then registered for a brief moment until it either ceases to exist or it is transformed into a more sustainable memory (Widmaier, et al., 2003). As thoughts are transferred to a long term memory, both chemical and structural changes occur to leave a pattern of path for future utilization. With frequent recall of this new knowledge, relatively permanent modifications in physical and chemical structures of the brain will occur that ensure continued access of that knowledge (Widmaier et al., 2003).

The concept of memory have been examined in early research by studying what activities or variables affected how one will learn to undertake a simple task in the laboratory controlled environments. Concerns for ecological validity however generated important change in thought concluding that memory was made up of many diverse aspects of the learning process of which all are not well understood (Entwistle, 2005).

Several other studies have tried to explore the meaning of cognition and intelligence. By definition, cognition refers to, ‘...the mental processes and activities we use in perceiving, remembering, thinking and the act of using those processes’ (Hansen-Lemme, 2006, p.125). Cognition is further understood to be a result of a complex, reciprocal interaction between the individual’s genetic make-up and various strata of the social, cultural and historical environment (Hansen-Lemme, 2006). In addition, over the course of an individual’s life time, the multidimensional, multidirectional and multi-causal natures of cognitive development give credence to the idea that this is not a stagnant process.

The changes that occur over time in an individual's intelligence have been explained by theory developed by Cattell (1963) and Horn (1986). The first level is defined as fluid intelligence or the mechanics and the second level is defined as crystallized intelligence or the pragmatics of thought. While the first level is considered the genetic potential for intelligence, the second tier reflects the individual's interaction with his/her environment. Havistoa and Lehtob (2004) in fact described cognition as an object into itself, meaning that it has the ability to construct further layers. Described as reflective abstraction or meta-cognition, a third tier consists of higher mental functions that encompass the ability to critically think, to apply logical-mathematical structures and to employ strategies to solve problems (Perlmutter, 1988, chap.12). As an open tier which is internal and experientially based; this aspect of cognition has the potential to develop further and may be relatively immuned from deterioration that is associated with biological aging and declining health.

The study of cognition evolved from a single internal focus of mental activity and behaviour to a much broader concept of cognition that encompasses multiple layers and characteristics with the capacity for growth and development over the course of a lifetime. These higher levels of cognitive functioning laid foundations for describing cognitive and intellectual processes and led to further study to understand the concept of intelligence and to define one's potential for learning.

Intelligence can be described as, "...a hypothetical construct – an inferred concept which can be used as a way of explaining the observed differences in intellectual performances" (Entwistle, 2005, p 8). This notion has grown out of early attempts to describe the individual differences observed when people complete certain tasks.

As a means to measure cognitive performance, one of the earliest tools, the intelligence quotient (IQ) test was developed to measure cognitive or mental potential for instruction (Ruston and Ankey, 2009). Developed in the early 1900's and revised and re-standardized over several decades, the Stanford–Binet Intelligence Scale or IQ test migrated from a measure of school potential to a measure of intelligence (Kubiszyn and Borich, 2007, chap.19).

Even though intelligence is relatively stable, it is important to understand that intelligence can vary and can be affected by factors such as personality, motivation and the social, home and educational environment (Entwistle, 2005). These aspects were further validated by psychological researchers such as Bandura's (1997) research and the development of social learning theory and the theory of self-efficacy, and Tinto's (1993) theory of persistence. Therefore, it may seem that intelligence is more global or the sum of various elements and skills that are modifiable within the limits of one's motivation and life experiences.

Thus it is evident that learning is more than the neuro-physiologic processes of memory cognition, or genetic intellectual potential. It is now widely accepted both by psychologists and educators that learning requires an active process that includes the construction of meaning (constructivism) from what is to be learned. Hence, learning is not merely affected by a stimulus or genetic organic potential but includes the engagement, grappling, and seeking to make sense of things (Entwistle, 2005).

2.2 Conceptual Foundation: Astin's Input-Environment-Outcome (I-E-O) Model

This study focuses on investigating the relationship between educational experiences and students' outcomes in the Ghanaian context. Astin's theory (1984, 1993, 1999) is used to illustrate student-related factors as well as institutional and educational experiences of nursing students because this theory involves the institutional stakeholders in terms of student engagement in the institutional support services as well as academic development, retention, and graduation rates. Astin's theory of Input-Environment- Output/Outcome (I-E-O) model as captured in Figure 1.1, Chapter one, is adopted to guide the proposed conceptual model of this study because it lends itself to a theoretical framework that illustrates the cause and effect between the students' input and the students' outcomes of their educational experiences.

According to Astin's theory of Input-Environment- Output/Outcome (I-E-O) model, input refers to personal characteristics of the student at the time before enrolling in the institutions (Astin, 1993). The highlighted characteristics of input may be family background, marital status, age, gender, race, parental education, housing, high school grades, goal commitment and academic self -concept, social experiences, achievement expectancies, and past experiences. Environment in this context is defined as institutional resources to facilitate the learning atmosphere of the student including various programmes, policies, faculties, peers and educational experiences (Astin, 1993, p. 7). The outcome is identified as the students' resultant characteristics such as knowledge, skills, critical thinking, attitudes, values, beliefs, and behaviour after being involved in the academic environment and the student's level of academic success (Astin, 1993, 1999).

2.3 The Relationship between Student Input and Students' Academic Success

In this study, student input refers to personal characteristics of the student before enrolling in a nursing programme. Hence, literature relating to student input and students' academic success were reviewed as follows:

Linking Demographic Factor and Students' Academic Success

Evidence suggests that non-academic or demographic variables could play very important role in predicting academic performance of the students and can thus be justified to use in the admission process (Lytle, 2007, Platt et al., 2001, Tanya, 2009, Trofino, 2013). Generally, various studies that attempt to explain academic failure start with the three elements that intervene in education: parents (family causal factors), educators (academic causal factors), and learners (student-related factors). Among the student-related factors, age, parent's education level, grades obtained in basic sciences, note taking skills and student's ability to study in groups have been studied (Colucciello, 2010, Lewis, 2009). Parental education as well as employment background is important factor that significantly affects students' academic success (McKenzie & Schweitzer, 2001).

Melby and Conger (1996) opine that family income, parental education and parental involvement have an influence on the academic experience of students in their secondary and post-secondary education. Henry *et al.* (1993) identified that parental involvement in support, reasoning, punishment, monitoring, and autonomy granting encourage students to successfully navigate their campus life; students who regularly received psychological counseling from their parents, tend to obtain significant skills for their academic success in university.

Another study carried out by Jeynes (2002), revealed that the educational level of parents, occupational status and income level are associated with academic performance. Based on the cultural capital theory, students who come from well-educated families will obtain success (McMillan & Western, 2000). It therefore goes without saying that low socio-economic status may negatively affect academic success since students cannot access much needed resources for their academic development. In addition, social economic background is one of the major components of educational quality; academic success strongly depends on the social economic status of parents who economically foster their children to get academic achievement (Graetz, 1995 & Jeynes, 2002).

Lengacher & Keller (1990) for example conducted a study to examine relationships between selected demographic variables and performance on US-based Licensing Examination (NCLEX-RN). Data were attained from records of 146 associate degree graduates who were admitted to an associate degree programme in nursing. For graduates who wrote the NCLEX-RN examination in July 1987 and July 1988, Pearson product moment correlations and stepwise multiple regression analyses were used to identify the relationship between the predictor variables (admission criteria, age, perception of role strain, achievement in clinical and nursing courses), achievement on the National League for Nursing (NLN) examinations, exit Grade Point Average (GPA), and the criterion variable (scores on the NCLEX-RN examination). The best predictor for performance on the NCLEX-RN of the selected admission variables, age, perception of role strain, exit GPA, and American College Test (ACT) were, exit GPA, and ACT composite scores.

Briscoe and Anema (1999) conducted a similar study on a convenience sample of 38 associate degree graduates from a public urban university using variables that were studied in previous studies on baccalaureate graduates. There were fewer studies done on the associate degree graduates, and the purpose of this study was to compare the results for the baccalaureate and associate degree programmes. Study variables included pre-admission GPA, failing a clinical or nursing theory course, two NLN test scores, age, and race. Four variables were found to be significant predictors: NLN tests I and II, age, and race. Older students had higher pass rates on NCLEX-RN in this study with the mean age being 35 years.

In a qualitative study, Eddy and Epeneter (2002) evaluated non-academic, qualitative predictors that examined the student's point of view regarding NCLEX-RN outcomes. The study was conducted at a private college in Oregon. Nineteen baccalaureate nursing students were selected randomly from the 1998 graduating class. Ten of the students were successful on the NCLEX-RN and nine were unsuccessful. The criteria included activities and feelings during the weeks around the examination, including time elapsed between graduation and testing, student preparation for the NCLEX-RN, students' feelings during the examination, environmental influences, and perceived difficulty of the examination. The second set of questions included criteria related to their nursing education, including self-perceived test-taking abilities, helpfulness of classroom activities, salience of clinical activities, needed changes in the programme, needed individual change, and feelings about the outcome of the examination. These data provided a unique view of the NCLEX-RN experience with three distinct but overlapping areas of interest identified: internal learner specific issues, programmatic issues, and examination issues. The few studies on these types of predictors have

shown them to be weaker than the more robust academic predictors but provide valuable insight into declining first-time pass rates.

The purpose of a study by Haas, Nugent, and Rule (2003) was to predict student success on the NCLEX-RN. Selected variables were tested to determine their relationship with students' NCLEX-RN performance. The study variables of gender, race, age, nursing cumulative GPA (defined as the GPA for all school of nursing courses), transfer undergraduate GPA (defined as the cumulative GPA of all undergraduate courses taken prior to admission into the school of nursing), cumulative undergraduate GPA, verbal and quantitative SAT scores, and group membership according to campus location were selected because these data were collected on all students during the admission process. The nursing programme is an upper-division programme, with students being admitted after completing two years of general education courses and supporting pre-nursing courses.

The sample population consisted of 368 students who graduated from the programme between the years of 1991 and 2001. The sample was predominantly composed of Caucasian women, who were between the ages of 22 and 50 at the time of graduation. Results included the following: men are more likely to fail than women, African Americans have a higher failure rate than Caucasians, and existing student data (cumulative GPA, verbal SAT scores, age, and race) can predict student success on NCLEX-RN with a high level of accuracy.

Understanding the relationship between student-related factors and academic performance and predictors of student's success in nursing schools is not only important for the nursing institutions but also students, parents and the society as a whole. With such knowledge, parents and counselors are able to give students better-

informed advice on choosing their college programmes, and students are able to better understand their potentials and make wiser decisions for their future. The society as a whole would certainly benefit if the limited educational recourses are used effectively and students' potentials are maximized. Unfortunately, generalization of study findings mentioned above is threatened by the fact that all the studies were conducted in developed countries. This study therefore seeks to ascertain context appropriate student-related factors that influence student performance in the licensure examination.

2.4 Linking Prior Schooling and Students' Academic Success

A good score in English, Mathematics and Integrated Science appear to be positively correlated (Furner and Kumar, 2007). The entry qualification, as determined by the National Council for Tertiary Education, in conjunction with the Nursing and Midwifery Council of Ghana, are as follows:

1. For SSSCE candidates, passes (A-D) in six (6) subjects comprising three (3) core subjects, including English and Mathematics, and three elective subjects.
2. For WASSCE candidates, credit passes (A1-C6) in six subjects comprising three core subjects, including English and Mathematics, and three elective subjects.

A number of researchers have investigated how students' proficiency in English and achievements in science and mathematics affect their academic achievement in the United States and the United Kingdom (Poyrazli et al. 2002). A study by Tanya (2009) to determine the ability of pre-admission academic achievement-related variables to predict nursing programme completion and NCLEX-RN success found

pre-admission science scores, reading scores and health-related coursework GPA as predictive of NCLEX-RN success.

Ogbonnaya et. al (2013) carried out a descriptive study of the correlation type to determine the relationship between entry qualification and academic performance in two basic schools of nursing in Enugu State, South-East, Nigeria, between 1995 and 1999. The study retrospectively examined the scores of a sample of 390 nursing students. Data were O' level GCE/SSCE Grades, representing the entry qualification; and the final pre-qualifying examination result scores, representing the final academic performance collected from student records and analyzed based on the formulated hypotheses. Pearson's product-moment Coefficient of Correlation and t-test were used to compare performances. A positive correlation which was statistically significant was found between entry qualifications and final performance. One of the schools performed better than the other, while science based students performed better than non-science-based students. It was recommended that relevant regulatory bodies should ensure that prospective student nurses get credit passes in all the basic sciences as part of the requirements for admission.

Potolsky, Cohen and Saylor (2003) also evaluated two factors relating to academic performance for first semester nursing students. The study found academic performance on the science courses to correlate significantly with nursing school performance in the first year. This study however failed to include demographic and background information on the participants.

In 2005, Arnold, Calkins, and Willoughby determined the relationship between students' high school achievement and their performance in the six-year combined baccalaureate school and doctor of medicine programme in a school of medicine in

Missouri. They found that the most consistent predictors of students' performance in the combined baccalaureate and doctor of medicine programme were high school science GPA, scores on the college aptitude test, the number of social science College Level Examination Programme hours earned, and ratings received from references.

Murden et al. (2010) also investigated both the academic and non-academic predictors of medical school students' clinical success. Used in their study as the dependent variable was the internship evaluation (with grades A, B, C, or D) by a 10-member Internship Advisory Committee. The academic predictors used as independent variables were college science GPA and Medical College Admission Test, and the non-academic independent variables included maturity, rapport, non-academic achievement, and motivation, as evaluated during the interview. The results of their study revealed that the college science GPA had a smaller but nevertheless significant relationship with clinical success, and that students with high levels of maturity, non-academic achievement, motivation, or rapport, were about two to three times as likely to receive outstanding internship recommendations as those without such characteristics.

Rahbar et al., (2001) examined the predictability of the performance of the medical students during the first trimester from their admission test scores, interview ratings and system of education. Findings indicated a significant relationship between admission test scores and the subject test scores in Medicine Bachelor Bachelor of Surgery (MBBS) part I examination. These are the two first professional undergraduate degrees awarded upon graduation from medical school in medicine and surgery by universities in various countries that follow the tradition of the United Kingdom. An association was also found between the system of education and

academic ability of the students(Rahbar et al., 2001). The study concluded that the system of education from which the student received his or her previous education, has an effect on certain courses such as community health sciences and physiology but not in anatomy, biochemistry, Islamic and Pakistan studies. Age and interview rating at the time of admission were not found to be associated with the student performance in the M.B.B.S part I examination (Rahbar et al., 2001).

Using a retrospective study, Lytle (2007) examined the admission criteria of an Associate Degree Nursing Programme in the South Eastern United States to determine if admission factors for students who were successful on the NCLEX-RN examination differed from admission factors for students who were not successful. Findings from this study indicated that students with higher reading scores on a standardized nurse entrance examination were more likely to pass the NCLEX-RN. Students with a score of 70.8% and higher had a 68% chance of passing the NCLEX-RN on the first attempt as compared with a 32% pass rate for students with a score of 63.4% or lower on the reading portion of the nurse entrance examination. In addition to the reading scores, the number of attempts at prerequisite courses affected student NCLEX-RN success. These findings notwithstanding, the relatively small sample size and the use of a single ADN programme compromised generalisation of study findings to other settings.

Admission into a nursing programme is the first step for entering the nursing profession. Identifying and recruiting students who are most likely to succeed in the nursing Programme is an important role of the admission criteria. Endres (1997) conducted a retrospective study concerned with identifying the strongest predictors of success for African American and foreign-born baccalaureate graduates. Three

random samples of 50 African American graduates, foreign-born graduates, and Caucasian graduates were obtained from a total population of 1,206 from 1987-1992. Nine variables were studied, including: cumulative GPA, nursing course grades, numbers of Ds and Fs obtained, and percentile rank on the Mosby Assess Test, and found when compared to Caucasian graduates' results that (a) ethnicity had no relation to NCLEX-RN scores; (b) students making Ds or Fs in nursing courses were more likely to fail NCLEX-RN; (c) students with percentile ranks lower than 21 % on the Mosby Assess Test™ were more likely to fail NCLEX-RN; and (d) graduates who passed NCLEX-RN had higher previous and cumulative GPAs.

2.5 The Relationship between Campus Environment and Students' Academic Success

Campus environment as used in this study refers to institutional policies that influence student experiences and outcomes during their studies in a college or nursing. It is discussed under two main support services: academic support services and non-academic support services. Academic support services are defined as any service that relates to (1) academic curricular and extracurricular activities, (2) academic staff, (3) physical facilities, and (4) faculty interaction. Non-academic support services are considered as services that are related to (5) financial support and scholarship and (6) accommodation and other support services.

2.5.1 Linking Curricular and Extracurricular Activities and Students' Academic Success

Several studies have been conducted concerning the relationship between extracurricular activities and academic performance (Rasberry et. al, 2011). Participation in extracurricular activities is linked with an improved grade point

average, higher educational aspirations, increased college attendance, and reduced absenteeism” (Broh, 2002, para. 8). Guest and Schneider (2003), in looking at the previous research on this subject said, “Researchers have found positive associations between extracurricular participation and academic achievement”. Although researchers agree that extracurricular activities do, in fact, influence academic performance, the specific effect that various activities produce is debated. One study, conducted by the National Educational Longitudinal Study, found that “participation in some activities improves achievement, while participation in others diminishes achievement” (Broh, 2002).

Many extracurricular activities have proven to be beneficial in building and strengthening academic achievement, even if the activities are not obviously related to academic subjects (Marsh & Kleitman, 2002, para. 9). “A number of studies revealed that students participating in extracurricular activities did better academically than students who did not participate” (Marsh & Kleitman, 2002, para. 7). Researchers have particularly studied the relationship between extracurricular activities and academic performance in adolescents. One study found that “adolescents who participated in extracurricular activities reported higher grades, more positive attitudes toward school, and higher academic aspirations” (Darling, Caldwell, & Smith, 2005).

Darling, Caldwell, and Smith (2005) conducted a longitudinal study concerning extracurricular activities and their effect on various aspects of development, including academic performance. A questionnaire containing a list of twenty different extracurricular activities was distributed to students; they were asked to check which extracurricular activities they participated in that year. Demographic questions, such as their favorite activity, gender, and ethnicity were asked in order to take the social

factors and influences into account when calculating the results. The students were also asked what their academic goals were and their grade point average. The results showed that the students who participated in school-based extracurricular activities had higher grades, higher academic aspirations, and better academic attitudes than those who were not involved in extracurricular activities at all.

2.5.2 Linking Academic Staff and Students' Academic Success

The experience and quality of lecturers in nursing education have been documented to be positively correlated with student achievement (Greenwald et al., 1996; Hanushek, 1996). The role of a good teacher has been described in literature to be that of a facilitator, assessor, participant, and motivator (Parr, 2005). In a study carried out by McInerney (2000), there are nine core stages for teachers in promoting students' academic success as follows: (1) start the lesson with a quick review of previous learning and outline goals, (2) present material in small steps and allow application after each step, (3) Provide clear and detailed instructions and explanations, (4) ask a large number of questions and check for student understanding, (5) guide students in initial phases of learning and application, (6) provide systematic feedback that is task-based, (7) Monitor students as they work, (8) Provide ample time for completing tasks, identify in advance what material/concept might be difficult.

Lecturers have been known to have important influence on students' academic achievement and they also play crucial role in educational attainment because the teacher is ultimately responsible for translating educational policies and principles into actions based on practice during interaction with the students (Afe, 2001). Both teaching and learning depend on teachers: no wonder an effective teacher has been

conceptualized as one who produces desired results in the course of his duty as a lecturer (Uchefuna 2001).

A study commissioned by the Nursing and Midwifery Council of Ghana and carried out by Wilmot et. al. (2013) investigated factors that accounted for the poor performance of nursing and midwifery trainees in the Council's examinations. Factors investigated included school-related, student-related and clinical-related. The study identified large class sizes, inadequate tutors and outdated library books as some of the factors that negatively affect student performance.

2.5.3 Linking Physical Facilities and Students' Academic Success

The statement that the nature and condition of school infrastructure contributes to school effectiveness in the form of learner achievement and well-being seems obvious from a 'common-sense' point of view. Educational process of development occurs in physical, social, cultural and psychological environments. If school environment is comfortable, learners and teachers are more likely to attend school regularly.

Further, if school environment is physically comfortable and has all the necessary basic facilities, schooling itself is likely to be of a better quality, with better results. The phrase *learning environment* have however been broadly and carelessly used in educational literature. In most academic institutions, libraries have been considered as the primary study space on campus. It has however been argued by Bennett (2011) that the entire campus should be a learning space, and it is the responsibility of the institution to ensure this.

Physical facilities such as libraries, textbooks, learning and teaching materials are critical factors to facilitate students towards academic success (Harmon & Wales, 1999; Mavondo et al., 2000). In order to ensure educational quality and facilitate

student's learning process to help them succeed, educational institutions must provide library services and resources (ACC, 2009). It is also imperative for libraries to be equipped with new teaching technologies and electronic information such as up-to-date textbooks, journals, high speed internet access, LCD projectors, computer labs, visual and audio equipment to facilitate student learning (Heyneman, 2001, p. 348).

Environment plays a vital role in the development of the personality of the students. As a student spends most of his life at school, the school environment is highly responsible for the inculcating of great values in him. Learning takes places effectively only when proper and congenial environment is provided for students in the classroom. Their learning environment plays an inherent role in molding the innate potentialities of the individual and school has always been regarded as an important factor. Plant et al. (2005) found that students who studied alone in a distraction-free environment not only performed better during that semester but in college overall. Jansen and Bruinsma (2005) also reported that a student's perception of the learning environment actually had a higher impact on achievement than their academic ability.

Idowu (2013), investigated the relationship between Schools' Quality (SQ) and Students' Performance (SP) in Nursing and Midwifery Council Qualifying Examination (NMCQE) in Nigeria. Using a descriptive correlative design method with a target population of sixteen (16) Schools of Nursing in South-Western Nigeria, the study found a weak relationship between school quality and student performance. It was therefore recommended that concerted efforts be made to improve the School Quality Indicators (SQI) which will invariably improve students' performance (SP) in Schools of Nursing.

Swoope (1995) conducted a research to identify and investigate and identify retention factors that facilitate and increase minority retention in college education in an American university. He concluded that students' satisfaction with the university was due to their satisfaction with the academic environment, their satisfaction with the open, comfortable learning environment provided by professors; and by large, their satisfaction with the social environment within the university. In line with the previous view, Spencer (1995) recommended that university instructors need to understand that within the classroom, the academic, social and personal factors are naturally linked and promote student-student interaction; therefore, instructors need to be aware of the social character of the university classroom and to make it a comfortable venue for adults to share experiences and to assist the adult student to grow as self-directed learner

Fisher (2007) conducted a survey on the impact of school infrastructure on student outcomes and behaviour. The study surveyed the impact of how old school buildings were and generally identified three categories representative of school building: age, non-modernized, modernized, and new. Those who were in the new buildings performed better than those who were in the old building. He further indicated that for over 20 years it has consistently showed that there are 27 critical building elements whose design features, condition and level of maintenance all influence learning outcomes and students behaviour. Many of the research studies concentrated on evaluation whether there is a link between student performance and behaviour on the one hand, and overall conditions of school building on the other.

Basavanthappa (2003) agrees that physical facilities such as classroom, laboratories, library and offices are fundamental requirements of any educational institution.

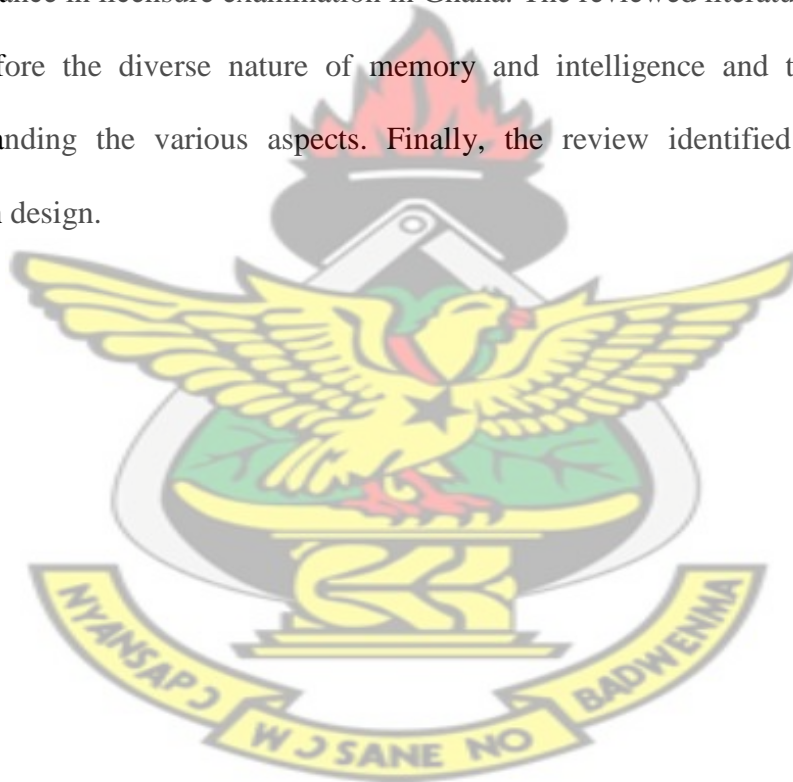
Without them it is difficult to carry out a programme on sound educational basis. He argues further that the number of classrooms should be sufficient to permit the scheduling of classes in keeping with its educational principles and at hours which are convenient to the tutor and students. Classrooms should not only be available but should be in good condition. He again argues that adequate number of classrooms will ease congestion and ensure class control by tutor and effective teaching and learning. In the same vein spacious and well stocked library will give students and tutors the opportunity to make research to adequately acquire relevant knowledge in the various subjects they are teaching. This will go a long way to improve the academic performance of the students.

Additionally Basavanthappa (*ibid*) stresses that availability of offices is also fundamentally important in ensuring that tutors are comfortable to prepare their lessons notes and to counsel students with academic problems. To further buttress this fact, World Education Report (1993) states that physical facilities are pre-requisites for quality education and ensure good student outcomes. Physical facilities like demonstration room, residential accommodation, classroom furniture (tables and chairs) spacious dining hall are very necessary for quality education and good student performance in the health training institutions.

A research study conducted by Haas *et al.* (2004) was the only study that included campus location as an independent variable for review. Although there has been limited research conducted on the influence of a campus environment and nursing student success, there are many theoretical models that support the relationship between educational environment, student retention, and completion.

2.6 Conclusion

The chapter reviewed literature on the relevant factors that influenced the performance of nursing students in the professional examinations conducted for nursing students. Utilising Astin's (1994) conceptual model of input-environment-output, several aspects of student-related factors and environmental variables that influence student learning have been discussed. Most of the studies identified were from the USA, with few from Nigeria and only one unpublished research report from Ghana. This is an indication of the dearth of literature on factors that influence student performance in licensure examination in Ghana. The reviewed literature further brings to the fore the diverse nature of memory and intelligence and the difficulty in understanding the various aspects. Finally, the review identified weaknesses in research design.



CHAPTER THREE

METHODOLOGY

3.0 Overview of the Chapter

The previous chapter reviewed literature relevant to factors that influence student performance in nursing programmes. The current chapter describes the methodology and procedures that were used for this study. The methodology and procedures selected permitted the study to examine specific variables related to student performance on the NMC-LE. The variables in this study are student related (e.g. prior admission characteristics and note taking skills); school-related (e.g. classroom space and library resources) and assessment related. The chapter begins with a description of Ashanti Region and the Four (4) Nursing Training Colleges where this study was conducted. This is followed by a description of the research methodology, sample selection procedure, design of instrument and data collection approach. The chapter ends with an explanation of the statistical procedures employed to analyze the data.

3.1 Study Design

This was a non-interventional, retrospective, cross-sectional study with statistical analysis. Polit and Beck (2010) described a non-experimental study as one in which there is no manipulation of the variables. This approach best suits the aim and objectives of the study as the students' related variables were not manipulated in any way. Burns and Grove (2009) also state that descriptive designs help to identify problems in current practice with a view to improve practice outcomes. Since the outcome of interest (success/failure in licensure examination) had already occurred at

the time the study was initiated, the retrospective approach is considered more appropriate (Parahoo, 1997).

3.2 Study Area

The Ashanti Region is centrally located in the middle belt of Ghana. It lies between longitudes 0.15W and 2.25W, and latitudes 5.50N and 7.46N. The region shares boundaries with four of the ten political regions, Brong-Ahafo in the north, Eastern region in the east, Central region in the south and Western region in the South west. The region occupies a total land area of 24,389 square kilometres representing 10.2 per cent of the total land area of Ghana. It is the third largest region after Northern (70,384 sq. kms) and BrongAhafo (39,557 sq. kms) regions. The region has a population density of 148.1 persons per square kilometre, the third after Greater Accra and Central Regions. More than half of the region lies within the wet, semi-equatorial forest zone.

The region is divided into 22 sub-districts, 4 municipalities and 1 metropolitan. There are 47 electoral districts (parliamentary constituencies). The region has 36 Traditional Councils, each headed by a Paramount Chief. The Traditional Councils are the decentralized units of administration by traditional rulers and are used to mobilize the people at the local and community levels for development. The main language spoken in the region is Twi. Several festivals are celebrated in the region, the major ones being the Akwasidae and AdaeKese.

Between 40.0 and 50.0 per cent of the population in the districts, particularly females either have no formal education or have only pre-school education.

Its enviable heterogeneity in terms of population characteristics and institutional and Nursing Licensure examination performance, diverse cultural and economic activities makes it suitable and likely approximation to the situation pertaining to Ghana.

3.3 Study Sites

A total of about fifteen institutions are involved in the training of Nurses and Midwives in the Ashanti Region. Bachelor of Nursing is offered by Kwame Nkrumah University of Science and Technology, Garden City University College and Christian Service University College. Diploma programmes are offered by the four Nursing Training Colleges included in this study, namely S.D.A. Nursing Training College, Agogo Presbyterian Nurses' Training College, Premier Nurses' Training College, and Komfo Anokye Nurses' and Midwifery Training College. In addition to the general nursing programmes offered, some of these schools offer Midwifery and health care assistant clinical programmes. The four Nursing training colleges have been selected in view of their consistent poor performance in the NMC-LE that is below the national average of 50%. The selected schools are briefly discussed here:

Komfo Anokye Nurses' and Midwifery Training College

The Kumasi Nursing and Midwifery Training College (KNMTC) is public tertiary health institution in Kumasi in the Ashanti Region of Ghana. The school has a total population of about 1200 students. Seven Hundred (700) of these students are pursuing diploma in general Nursing course while the rest are studying diploma in Midwifery. The school is affiliated to the second biggest health facility in the country – Komfo Anokye Teaching Hospital.

SDA Nurses and Midwifery Training College

The College was established in October 2005 by the Central Ghana Conference of the Seventh-day Adventist Church with the support from Ministry of Health, Ghana and Kwadaso S.D.A. Hospital. It is located at Kwadaso, a suburb of Kumasi Metropolis. The school currently have a total population of 720 students and have produced about 1200 nursing graduates since its inception. Beginning this year, an additional programme (diploma in Midwifery) would be added to the existing nursing programme.

Agogo Presbyterian Nurse Training College

The Swiss Missionaries established the College in March 1936. The College is currently training students for the Diploma in General Nursing Course. The institution admits both males and females and currently has a population of two hundred and fifty two (252) students. The population is likely to increase for subsequent years. The institution is under the Christian Health Association of Ghana (CHAG) and trains nurses for CHAG, Private and Government institutions.

Premier Nursing Training College

The school, which is located at Moshie Zongo in the Kumasi metropolis, was established in September 2008 to train general nurses and Health Care Assistants. It has a total student population of 400 students. The school has consistently performed below 30% in the NMC-LE.

3.4 Population and Sampling

3.4.1 Study Population

A study population refers to all the elements that meet the criteria for inclusion in a study (Brink et al., 2012, Burns and Grove, 2009). The population for this research

comprised nursing graduates, tutors and principals in the selected schools. Eligibility for participants in this study included:

- being accessible to the researcher;
- being a graduate from the selected schools between 2010 and 2013, and
- having sat for the NMC-LE

Key informants (tutors and principals) from the selected institutions were recruited to be part of the study. Cormack (2000) suggests that the descriptive nature of key informant interviews requires the use of small sample size, because of the in-depth nature of the study and the analysis of data required.

3.4.2 Sample size determination

The total population was **3857**. These comprised Nursing students who graduated from the 4 Nursing Training colleges between 2010 and 2013 (3797); Principals (4) and Tutors (56). Working with a 95% confidence interval, the sample size was estimated using Slovin's formula (1960) as follows:

$$n = N / (1 + Ne^2)$$

where

n= the desired sample size

N = total number of students writing the NMC-LE between 2010-2013

e = Error tolerance

$$N = 3857 / (1 + 3857 * 0.05 * 0.05) = 399.3 \sim \mathbf{400}$$

Factoring in a non-respondent rate of 10%, the estimated sample will be

$$10/100 * 400 = 40$$

$$n = 400 + 40 = \mathbf{440}$$

A sample size of 440 was therefore selected from the target population.

3.4.3 Sampling

This involves selecting a group of people with which to conduct a study. Burns and Grove (2001:366) described sampling criteria as “the characteristics essential for membership in the target population”. Both probability and non-probability sampling was applied in selecting the research participants.

The researcher used systematic random sampling in selecting nursing graduates for the study. This technique was chosen because of its simplicity for it added a degree of system into random selection of subjects. It is a type of probability sampling whereby the researcher ensures that all the members of the population have equal chances of being selected as the starting point or the initial subject, (Basavanthappa, 2007). A list of all students who graduated between 2010 and 2013 from the included institutions was obtained with the help of the respective principals and academic officers. Sampling interval for systematic sampling was determined by dividing sample size by the total population of students in the list. Sampling interval (k) = N/n ; $3857/440=8.7$. Therefore, the sampling interval determined was 9. Hence, every ninth (9^{th}) nursing graduate was chosen to participate in the study. With the help of the Regional Health Directorate, participants were traced to their respective institutions and interviewed. The sample distribution was proportional to the size of the total graduates available for the study. In all, 140 students were interviewed from SDA nursing training college, 110 from Komfo Anokye Nursing Training College, 100 from the Premier Nursing Training College and 90 from Agogo Nursing Training College.

Purposive non-probability sampling was used in selecting 8 nursing tutors and 4 principals. In this method not every element of the population has an equal opportunity to be included in the sample (Polit & Hungler 1999:235). The method is

appropriate for this study as the tutors and principals have personal knowledge and understanding of factors that contribute to student performance in examinations.

3.5 Study Variables and Measurement

The study was guided by the logical framework summarised in Table 1.1. Student related factors included socio-demographic factors, income status of family, parental occupation, subjects studied at the senior high school, family size, grades obtained at the SSSCE/WASSCE, note taking skills ability to draw personal time table and belonging to a study group. These were measured as proportions, frequencies and salient quotes from in-depth interviews. School-related factors as an independent variable was also explained by mode of student assessment, teaching methodologies, library resources, teaching aids and classroom space. These factors were measured as proportions and descriptive statistics. To ascertain which factors are more important, logistic regression was run to estimate the odd ratios, confidence intervals, and other related statistics. Factors relating to the conduct of internal and external examination for nursing students and its dependent variables were neither explained nor measured as they are beyond the scope of this study.

Table 3.1: Study variables and measurements

Objective	Dependent Variable	Independent variable	Conceptual Definition of dependent variable	Scale of measurement	Indicators	Data Collection Method	Type of statistical analysis
<i>To assess student-related factors that influence student learning</i>	Student-related factors	Subjects and grades obtained at the SSSCE/WASSCE, Note taking skills, drawing personal time tables, belonging to study groups, reading skills	Qualities or attributes of the student that can influence acquisition of knowledge	Nominal	Proportions , frequencies , mean	Questionnaire , interview guide	Descriptive, Pearson product moment correlation
To examine the extent to which school-related factors support teaching and learning	school-related factors	Mode of assessment, classroom space, skills lab, library resources, teaching methodologies, teaching materials, end of semester examinations	An environment that physically, socially and psychologically affect student learning	Scale, nominal	Mean, frequencies	Questionnaire Checklist	Descriptive, Pearson product moment correlation, Logistic regression
To determine tutor-related factors that influence student's learning	Tutor-related factors	Tutor workload, professional preparation, tutor absenteeism and tutor motivation	Attributes of the tutor that can directly influence the academic performance of students	Scale, nominal	Frequencies, mean.	Questionnaire , interview guide	Descriptive, Logistic regression
To examine factors related to the conduct of internal and external examination	conduct of internal and external examinations	Number of papers written for licensure examination, duration of spread of the licensing examination	The mode of assessment of students and how they relate to the NMC-organized licensure examination	Scale, nominal	Frequencies, mean	Scale, observation	Descriptive, Logistic regression

3.6 Data Collection Techniques and Tools

Burns and Grove (2001:49), define data collection as “the precise systematic gathering of information relevant to specific research objectives or questions”. According to Burns and Grove (2001:50), data can be collected in several ways depending on the study and can include a variety of methods; however, the research objectives must be accomplished with the instrument used. In meeting the objectives of this study, the study used self-administered, semi-structured questionnaires to collect data from the selected nursing graduates and nursing tutors. This choice of data collection instrument was appropriate since the students could read and write. The questionnaires focused on the student characteristics, training resources in the selected Training Colleges and training hospitals, the licensing and college qualifying examinations (Appendix I).

Face to face interview was used to gather the needed information, ideas, and insights on the possible factors that influenced student (Ellis, 2010) from the 4 nursing principals. This approach allowed for a close observation of non-verbal communication and clarification of ambiguous responses. The interviews which averagely lasted between 30 to 60 minutes were audio-taped with permission from the participants. Anonymity was ensured and participants reminded of their right to withdraw from the study or terminate the interview at any time.

3.7 Quality Control

Requisite permission was obtained from the selected institutions and prospective study participants. All study protocols were further subjected to review and approval by Committee for Human Research Publication and Ethics (CHREPE) of KNUST/KATH. Questionnaires were pre-tested on fifteen (15) nursing graduates who

wrote the licensure in 2013 from Sunyani Nursing Training College. This lasted for approximately one week; a period during which problems identified in the questionnaire were corrected. Five research assistants were given training for a period of three days. Filled questionnaires were saved in files in the sequence collected and kept in drawer for safe keeping. Data from questionnaires were organized through data coding, editing, cleaning, and re-entry. These activities ensured validity and reliability of information.

3.8 Data Analysis and Reporting

“The purpose of data analysis is to organize, provide structure to, and elicit meaning from research data” (Polit and beck 2008). The data collected was first edited, entered into excel and analyzed descriptively using the Stata software. The data was then subjected to Pearson product moment correlation to establish how the findings related to the NMC licensure examination. Logistic regression was further run to ascertain relevant factor(s) that influence LE failure rate. All statistical analysis was at 95% confidence interval. Qualitative interview with the four principals was audio-taped and latter transcribed. All possible identifiers were removed from transcription to maintain anonymity. Transcripts were analyzed thematically.

3.9 Ethical Considerations

In this study, the ethical consideration of confidentiality was strictly upheld. This was done through protection of the privacy of the students, tutors and key informants selected by not revealing their identities. The necessary permission was also obtained from heads of institutions and academic boards since no Ethics Committees existed. Informed consent was sought from prospective study participants. Research protocol was further subjected to review and approval by Committee for Human Research

Publication and Ethics (CHRPE) of KNUST/KATH. Information gathered from participants was kept in a safe place to further ensure confidentiality.

3.10 Assumptions of Study

The study assumed that the sample selected was representative of the population of interest. It was further assumed that respondents were honest in the provision of answers. Lastly, the study assumed that confidentiality of study participants was maintained.

3.11 Reliability and Validity of the Study Conclusions

Reliability

Easterby-Smith et al. (2002), defines reliability as the uniformity in measures used in data collection techniques or analysis during research studies. An instrument is said to be reliable if its measures accurately reflect the true score of the attribute under investigation. To reinforce and assess the reliability of the instrument in this research, evaluating test-retest reliability was undertaken to assess stability. The same questionnaire was used twice and a comparison of scores obtained. The comparison procedure was performed objectively by computing the reliability coefficient.

Validity

This is the degree to which an instrument measures what it is supposed to measure". Hammersley (1998) indicated that the relevance of the research is one way that the validity of the research can be evaluated. The study utilized simple random sampling in selecting students into the study. This allowed for gathering of information from variety of subjects; hence increasing external validity.

CHAPTER FOUR

RESULTS

4.0 Introduction

The findings for the study are presented in this chapter. All the questionnaires administered were analysed. The presentation of the findings is in tables and figures. Results are mainly descriptive and inferential statistics. The chapter also involves a bivariate and multivariate analysis of factors that predict the level of understanding of nursing programme.

4.1 Background characteristics of respondents

This section presents the background and socio-demographic characteristics of respondents involved in the study. Table 4.1 gives details of the socio-demographic characteristics of respondents. About two-thirds, 59.8%, of the students interviewed were females whereas 40.3% were males. The mean age of the students was 21 years and the minimum and maximum ages were 17 and 27 years respectively. Majority, 68.5% of them were between 20 and 24 years. More than 90% were Christians while 7.8% were Muslims. Responses from the students showed that majority of their mothers had up to secondary school education whereas majority of their fathers had tertiary education. Most students indicated that their mothers were traders or businessmen whereas 24.2% were public or civil servants. With respect to their fathers' occupation, 45.8% were public or civil servants whereas 14.0% were businessmen or traders. Only 7.8% and 4% of their mothers and fathers were health workers respectively. About 24.5% described their parents' income as adequate whereas 39% described as average.

Table 4.1 Background characteristics of respondents

Variables	Frequency (N=400)	Percentage
Gender		
— Male	161	40.3
— Female	239	59.8
Age		
— 15 -19	104	26.0
— 20-24	274	68.5
— 25-30	22	5.5
<i>Min/ max</i>	<i>17/27</i>	
<i>Mean</i>	<i>21</i>	
Religion		
— Christian	365	91.2
— Moslem	31	7.8
— Traditionalist	2	0.5
— Free thinker	2	0.5
Mother highest education		
— No formal education	17	4.3
— Primary/JSS/Middle	139	34.8
— Senior Secondary	83	20.7
— Tertiary	84	21.0
— Other	77	19.2
Father higher education		
— No formal education	4	1.0
— Primary/JSS/Middle	71	17.8
— Senior Secondary	104	26.0
— Tertiary	208	52.0
— Other	13	3.2
Mother occupation		
— No occupation/housewife	4	1.0
— Health worker	31	7.8
— Public/civil servant	97	24.2
— Trader/ businesswoman	211	52.8
— Farmer	34	8.5
— Artisan	12	3.0
— Other	11	2.7
Father occupation		
— No occupation/retiree	11	2.8
— Health worker	16	4.0
— Public/civil servant	183	45.8
— Trader/ businessman	56	14.0
— Farmer	47	11.7
— Artisan	50	12.5
— Other	37	9.2
Income level of parents		
— Low level	31	7.7
— Insufficient	6	1.5
— Adequate/sufficient	98	24.5
— Average	156	39.0
— High income level	17	4.3
— Don't know	92	23.0

Source: Field data, 2014

4.2 Characteristics prior to admission into nursing programme

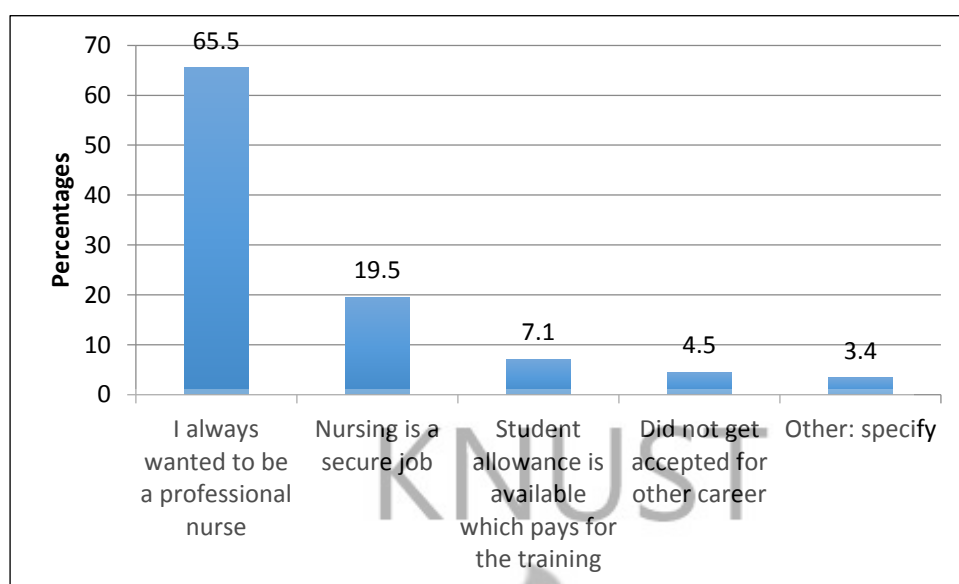
Table 4.2 shows the characteristics of respondents prior to their admission into the Nursing programme. Two hundred and forty (240) students representing 60% stated that they chose the programme as a first career whereas 28.7% chose it as a second. Majority, 60.3%, entered the programme with a WASSCE certificate whereas 27.7% entered with SSSCE. Only 4.5% entered as mature students with previous nursing background. Responses from the students show that 36.7% read General Science during Senior High School education whereas 32.8% and 15.8% read General Arts and Home Economics respectively. The students reasons for choosing to offer nursing programme included wanting to be a professional nurse (65.5%), nursing being a secured job (19.5%) and not getting accepted in other career choices as shown in Figure 4.1. Other reasons included practical experience to further medical assistant training and passion for the sick.

Table 4.2 Prior admission characteristics of respondents

Variables	Frequency (N=400)	Percentage
Nursing as a career choice		
— First	240	60.0
— Second	115	28.7
— Third	29	7.2
— Fourth	5	1.3
— Other	11	2.8
Entry category in the nursing programme		
— SSSCE	111	27.7
— WASSCE	241	60.3
— Matured (with previous nursing background)	18	4.5
— Matured (without nursing background)	30	7.5
Course read during high school education		
— Science	147	36.7
— Arts	131	32.8
— Home economics	63	15.8
— Agricultural science	25	6.2
— Other	34	8.5

Source: Field data, 2014

Figure 4.1 Reason for choosing nursing as a career



Source: Field data, 2014

As shown in Table 4.3, majority of the students indicated that their previous institutions were sited in an urban setting (53.2%) and government owned (71.7%). About 37% also disclosed that their former school was mission owned. Majority however believed their former schools had a high academic status (76.8%).

Table 4.3 Perception about former school

Variables	Yes, %	No, %
My former school was located in an urban setting	53.2	46.8
My former school was government owned	71.6	28.4
My former school was private owned	9.7	90.3
My former school was mission owned	37.1	62.9
My former school had a high academic status	76.8	23.2

Source: Field data, 2014

4.3 School-related factors influencing student learning

This section presents results on how school-related factors influence student learning among diploma nursing students in the study institutions. Most of the students spent more than two hours a day on their private studies with 28.3% spending more than 3 hours. About 44.8% were satisfied with the teaching strategies adopted by tutors whereas 41.3% had no opinion about that. The students' reasons for being satisfied with teaching strategies included adequate professional skills in teaching; appropriate measures used by lecturers, friendly relationships existing and good teaching methods. Among those not satisfied, reasons cited included tutors focusing on selling handouts instead of giving detailed lectures. More than half of the students (62%) stated that the learning environment in the institution was conducive for academic work whereas 26.8% thought otherwise. This they attributed to lot of noise on the environment, classrooms cited too near to roadside, lack of facilities and equipment and hostels being too far from campus.

Majority of students however would like to see improvements or adjustments in the learning environment at their respective institutions. Some suggested improvements cited included improvement in infrastructure, teaching methods, teaching learning and materials, content of the course should be more practical, relocation of school to a more serene environment, reduction in course outline, and tutors must be punctual. Thirty percent of the students interviewed disclosed that they always obtain adequate academic support whereas 16.3% believed it is obtained seldom. Majority, 58% indicated that they are able to apply the theory taught to practical training most of the time.

Table 4.4 School related factors influencing student learning

Variables	Frequency (N=400)	Percentage
Time per day spent on private studies		
— One hour	28	7.0
— Two hours	93	23.3
— Three hours	157	39.2
— >Three hours	113	28.3
— Don't know	9	2.2
Satisfaction with teaching strategies		
— Agree	179	44.8
— Disagree	56	14.0
— Don't know	165	41.3
Conduciveness of learning environment		
— Yes	248	62.0
— No	107	26.8
— Don't know	45	11.3
Like to see improvements or adjustments		
— Yes	253	63.2
— No	85	21.3
— Don't know	62	15.5
Obtain adequate academic support		
— Always	120	30.0
— Most times	159	39.7
— Seldom	65	16.3
— Never	33	8.3
— Don't know	23	5.7
Able to apply theory taught to practical training		
— Always	111	27.8
— Most times	232	58.0
— Seldom	32	8.0
— Never	-	-
— Don't know	25	6.2

Source: Field data, 2014

4.4 Personal and social factors influencing students' performance

Table 4.5 shows the results of various personal and social factors that influence students' performance in the licensing examination. The results show some students responses on a 5-response Likert scale ranging from 'strongly agree' to 'strongly disagree' (perception questions), whilst others were direct questions. On the level of stress, about 40.5% of the students consented to the fact that the combination of

classroom work with the practical makes the work difficult for them whereas about 48.9% believed otherwise. A little over half, 52.9%, were also of the view that they constantly feel stressed or anxious during end of semester exam whereas 58.3% disclosed that they are frightened during end of semester exams.

Majority of the students found it easy to understand the content of the course in nursing or midwifery programme, and the guidelines meant for clinical sessions were easy to understand for majority of the students. However, about 60% refuted the fact that coursework was beyond their expectations whereas a little over 50% also disagreed that the clinical aspect of the programme is the easiest part of the programme. Majority of the respondents' consented to the variables to test study skills and time management. This included drawing personal time table for private studies (90%), belonging to a study group that meet regularly to discuss academic work (81.4%), taking personal notes during lectures (86.3%), being able to answer past questions of the licensing exams (82.5%), always approaching tutors for assistance with academic work when necessary (69.9%) and visiting the library each day for further reading (57.3%).

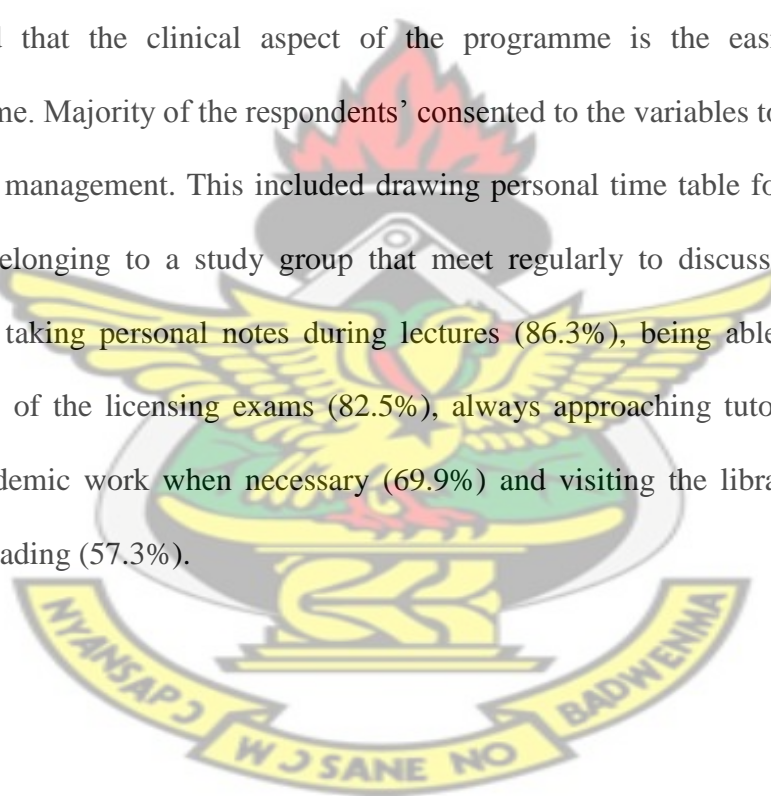


Table 4.5 Personal and social factors influencing students' performance

Variables	Direct Questions		Perception questions				
	Yes	No	SA	DA	MA	D	SD
Level of Stress							
The classroom work combined with the clinical I am undertaking makes the programme difficult	40.5	59.5					
I constantly feel stressed/anxious during end of semester examination	52.9	47.1					
I am frightened by the licensing examinations	58.3	41.7					
Intellectual Ability							
I find it easy to understand the content of the courses in the nursing/midwifery programme	50.6	49.4					
Guidelines meant for clinical sessions are easy for me to understand	66.4	33.6					
The coursework in the nursing/midwifery programme is beyond my expectation			7.6	21.7	10.3	46.3	14.0
The clinical aspect of the nursing/midwifery programme is the easiest part of training			12.9	29.9	6.7	40.3	10.2
The relevance of the coursework in the nursing/midwifery programme is questionable			9.8	28.6	23.6	27.7	10.2
Social Factors							
I fraternize with friends a lot while the semester is in session	29.1	72.9					
I enjoy attending entertainment activities organised in town	18.0	82.0					
Family responsibilities help to improve my performance in the nursing/midwifery programme			30.2	44.5	7.1	14.5	3.7
Church/other social roles help improve my performance in the nursing/midwifery programme			11.1	51.4	18.4	14.3	4.8
My gender has a positive effect on my performance in the nursing/midwifery programme			13.6	22.7	14.4	31.6	17.8
Study skills and time management							
I have drawn a personal time table for my private studies outside class hours	90.0	10.0					
I belong to a study group that meets regularly to discuss out academic work	81.4	19.6					
I have the habit of summarizing my lecture notes when I am studying on my own	80.9	19.1					
I take notes on my own in class during lectures	86.3	13.7					
I am able to answer past questions of the licensing examinations	82.5	17.5					
I always approach my tutors for assistance with my academic work if I don't understand anything	69.9	30.1					
I am punctual to classes every day	75.3	24.7					
I read ahead of class each day	62.4	37.6					
I visit the library each day for further reading	57.3	42.7					

Source: Field data, 2014

4.5 School level factors and practical issues of the nursing midwifery programme

Table 4.6 presents results of the institutional factors influencing performance in the licensing examinations. Among the social factors considered in the study, majority of the students responded that family responsibilities and church or other social roles help improve their performance in the programme whereas majority were in disagreement that their gender role has a positive effect on their performance in the programme and they fraternize with friends a lot while semester is in session.

On the other hand, in terms of the influence of school level factors, more than 50% of the students believed that the large class size does not give them chance to benefit from good teaching and students do not have enough time to study on their own because lights in their hostel/dormitory are put off too early in the night. On the other hand, majority stated that their library in the school is well resourced and tutors in their college teach well to their understanding and relate to students professionally. However, about 44% responded no to the question that tutors in their colleges are able to complete the syllabuses of the various courses. More than 70% disclosed that the end of semester examination questions are comparable to the past questions of the licensing examination and were happy with the mock examination organized in their colleges prior to the licensing examination.

Regarding practical issues about the programme, more than half of the respondents agreed that there was too much coursework than practical/clinical experience in programme (70.1%), time interval between the end of the nursing/midwifery coursework and the licensing examinations is too short (63.9%) and the number of papers assessed during the licensing examinations is too many for students to cope with (51.6%).

Table 4.6 School level factors and practical issues of the nursing programme

Variables	Direct Questions		Perception questions				
	Yes	No	SA	A	MA	D	SD
School Level Factors							
The large class size in my college does not give me the chance to benefit from good teaching	53.8	46.2					
The clinical practice take too much of my study time	43.2	56.8					
Tutors in my college teach well to my understanding	59.3	40.7					
Tutors in my college are able to complete the syllabuses of the various courses	39.8	60.2					
Tutors in my college relate to students professionally	52.3	47.7					
The end of semester examination questions in my college are comparable to the past questions of the licensing examination	70.4	29.6					
I am happy with the mock examinations organised in my college prior to the licensing examinations	85.9	14.1					
Students don't have enough time to study on their own because lights in their hostel/dormitory are put off too early in the night			15.5	37.3	11.6	20.9	14.8
The library in my school is well resourced			17.7	39.3	15.0	16.8	11.2
The equipment in the skills laboratory in my college is appropriate for my training			13.9	30.7	14.1	30.5	10.9
Practicability of the programme							
There is too much coursework than practical/clinical experience in the nursing/midwifery programme			33.9	36.2	5.1	20.2	4.6
The time interval between the end of the nursing/midwifery coursework and the licensing examinations is too short			26.7	37.7	6.2	23.8	5.6
It would be better if the licensing examinations were made to replace the end of semester examination of the nursing/midwifery programme			25.7	34.5	16.2	18.0	5.7
The number of papers assessed during the licensing examinations is too many for students to cope with.			22.6	29.0	3.1	32.6	12.8

Source: Field data, 2014

4.6 Perception of tutors on factors that influence performance in the licensing examination

This section presents results of 15 tutors' perception on factors that which influence students' performance at the respective training institutions in the licensing examinations. About 8(53.3%) of the staffs interviewed were females whereas 7 were males. Most of them held university degree (first degree or masters) and bout 46.7% had worked at the facility for 21 to 30 years. Six respondents (40%) were health tutors while 20% were senior nursing officers. About 60% taught for up to 10hours a week while 26.7% taught from 11 to 20hours a week.

Table 4.7 Demographic characteristics of tutors

Variables	Frequency	Percentage
Gender		
— Male	7	46.7
— Female	8	53.3
Years in teaching		
— <5years	1	6.7
— 6-10 years	6	40.0
— 11-20 years	1	6.7
— 21-30 years	7	46.7
Highest academic qualification		
— Diploma	1	6.7
— Degree	6	40.0
— Masters	6	40.0
— Other	2	13.3
Highest professional qualification		
— Deputy chief health tutor	1	6.7
— Health tutor	6	40.0
— Senior nursing officer	3	20.0
— Principal nursing officer	1	6.7
— Other	4	26.7
Number of years of teaching experience		
— 1-3	5	33.3
— 4-6	4	26.7
— 7-10	5	33.3
— >10	1	6.7
Number of hours taught per week		
— 6-10	9	60.0
— 11-20	4	26.7
— >20	2	13.3

Source: Field data, 2014

Majority of tutors indicated that the programme of the faculty reinforce the importance of the need to learn a nursing topic and provides the opportunity to learning the nursing process through hands-on-activities, Table 4.8. Some of the activities stated by the tutors included the use of patients and textbooks (1), giving students assignments to present prior to actual learning (2), presenting concepts through discussions and group presentations (2), classroom teaching and clinical practice (7).

Activities that benefit the students the most according to the respondents included case study and practical examinations (5), family planning and resuscitation of newborns (3), wound dressing (2), administration of medication (3), ward supervision (7) and identification of patient's problems (2). About 80% opined that the students are giving opportunities to solve problems in the learning process and offered immediate rewards of gratification during the learning process (53.3%). Some of the awards mentioned included best student award (4) motivation words, (5) awards of marks (3) and giving certificates to students (7).

Table 4.8 Results of the tutors' pedagogy

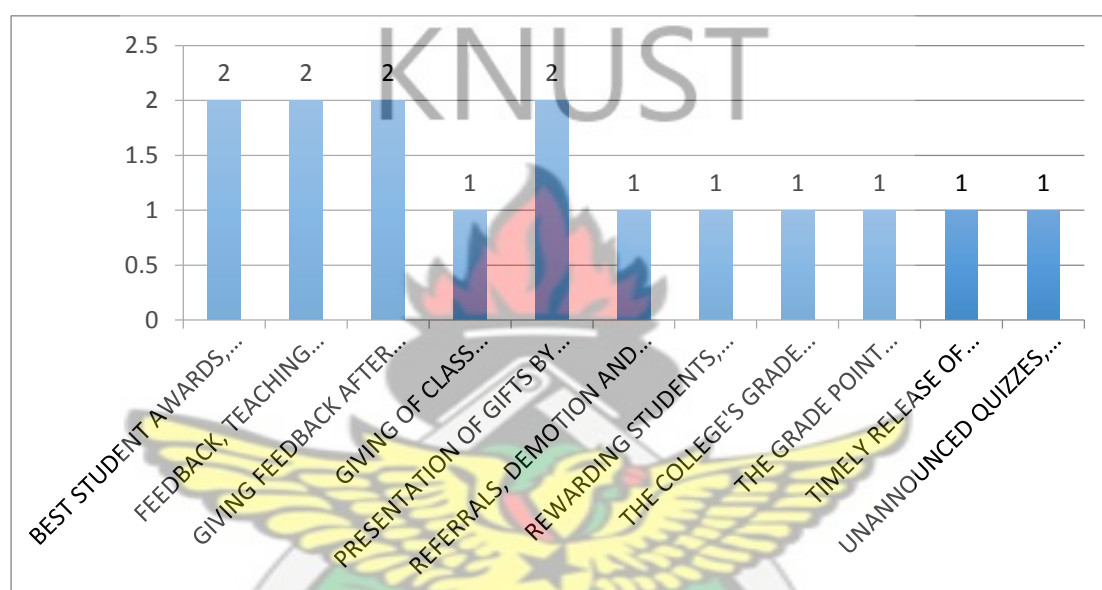
Variables	Frequency	Percentage
Program/faculty reinforce the importance of the need to learn a nursing topic		
— Yes	9	60.0
— No	6	40.0
Program/faculty provide opportunities to learn the nursing process through hands-on activities		
— Yes	9	60.0
— No	6	40.0
Students given opportunities to problem solve in the learning process		
— Yes	12	80.0
— No	3	20.0
Students offered immediate rewards of gratification during the learning process		
— Yes	8	53.3
— No	7	46.7

Source: Field data, 2014

4.6.1 Internal factors that are most influential in motivating students to learn

Figure 4.2 shows responses on internal factors tutors believed motivated students the most. These include student awards, giving of unannounced quizzes and tests, giving of assignments and group presentations, awards to best students, presentation of gifts by the school and giving feedback after examination as detailed in Figure 4.2.

Figure 4.2 Internal factors that are most influential in motivating students to learn



Source: Field data, 2014

4.6.2 Views of tutors on factors influencing students' performance in licensing examination

Table 4.9 presents results of tutors personal and stress issues that could influence students' performance in the licensing exams. All the tutors were in agreement that becoming a nurse/midwife educator was 'a dream come through' while about 80% indicated that they will always choose that career when giving the opportunity. All the respondents stated that they chose that career to move away from the workload at the health facilities while about 86.7% also disagreed that they chose to become tutors because they could not get the opportunity to return to their original posts. Majority of

tutors were agreement that, the combination of classroom work and clinical supervision makes their jobs more difficult. The tutors also disclosed that some of the students feel stressed during semester examination and some are frightened by the licensing examinations (92.3%).

Table 4.9 Tutors personal motivation and stress issues

Variables	Yes %	No %
Becoming a nurse/midwife educator is a dream come through	100.0	0.0
Given the opportunity I will always choose to be a nurse/midwife educator over any other career	80.0	20.0
I started with the nursing/midwifery profession because of the influence of my parents/friends	40.0	60.0
I decided to become a nurse/midwife educator because of the workload in the health facilities	0.0	100.0
I would like to become a clinical nurse	20.0	80.0
I choose to become a tutor because I could not get the opportunity to return to my original post	13.3	86.7
Level of Stress		
The classroom work combined with the clinical supervision/work I am undertaking makes the job difficult	66.6	33.3
Some of my students constantly feel stressed/anxious during end of semester examinations	86.7	13.3
Some of my students are frightened by the licensing examinations.	92.3	6.7

Source: Field data, 2014

4.6.3 The influence of students' intellectual ability and social factors on performance in examination

On students' intellectual abilities, more than half of the tutors consented that the students find it easy to understand the content of the course whereas 26.7% disagreed. Again, majority of the tutors disagreed that the coursework in the programme was

beyond students' expectations (60%). With respect to the relevance of the coursework, about 40% agreed it is whereas 60% disagreed. About 46.7% disagreed that family responsibility helps to improve students' performance whereas about the same percentage agreed that the church and other social roles help to improve students' performance. About 60% of the tutors believed that their gender influences the students' performance whereas 40% said they had no opinion about that.

Table 4.10 Views of tutors on students' intellectual ability and social factors

Variables	SA	A	MA	D	SD
Intellectual ability of students					
My students find it easy to understand the content of the course in the nursing/midwifery programme	13.3	60.0		26.7	
Guidelines meant for clinical sessions are easy for my students to understand	20.0	33.3	26.7	20.0	
The coursework in the nursing/midwifery programme is beyond the expectation of my students		26.7	13.3	40.0	20.0
The theoretical aspect of the nursing/midwifery programme is the easiest part of my students training		26.7	20.0	26.7	26.7
The relevance of the coursework in the nursing/midwifery programme is questionable	13.3	26.7		40.0	20.0
Social Factors					
Family responsibility helps to improve my students performance in the nursing/midwifery programme	6.7	33.3	13.3	46.7	
Church/other social roles help to improve my students performance in the nursing/midwifery programme	6.7	40.0	20.0	20.0	13.3
My students fraternize a lot with friends while the semester is in session		80.0	13.3	6.7	
My gender has positive effect on my students performance in the nursing/midwifery programme	46.7	13.3	40.0		
My students enjoy attending entertainment programmes organised in town		26.7	26.7	33.3	13.3

Source: Field data, 2014

4.6.4 Tutors and principals' views on school level factors influencing students' performance in licensing exams

Table 4.11 shows tutors' views on school level factors influencing performance in the licensing exam. With respect to school levels factors influencing performance in the licensing exam, most tutors believed that the large class does not give students the chance to benefit from good teaching (80%), the library is well resourced (80%) and the equipment in the skill laboratory is appropriate (93.4%). Majority of tutors believed that their colleagues teach well to students understanding, they relate to students professionally and they are able to complete the syllabuses on time. More than 90% were happy with the mock examinations organized by their respective colleges and they were of the opinion that the questions are comparable to the past questions for the licensing examinations and students were able to answer the past questions.

About 66.7% of the tutors however disagreed that students were punctual to class every day and read ahead of class each day. Further, majority of the tutors disagreed that students visit the library each day for further reading (66.7%) and there is too much coursework than practical experience in the programme (53.3%). About 46.6% however agreed to this assertion. About 50.3% agreed that it is better if the licensing examinations are made to replace end of semester examinations in the last semester of the nursing/midwifery programme whereas 46.6% disagreed. Finally, 66.7% were of the opinion that the number of papers assessed during the licensing examinations is too many for students to cope with whereas 33.3% disagreed to this assertion.

Table 4.11 Tutors views on school level factors influencing students' performance in licensing exams

Variables	SA	A	MA	D	SD
School level factors					
The large class size in my college does not give students the chance to benefit from good teaching	53.3	26.7		13.3	6.7
Students don't have enough time to study on their own because lights in their hostel/dormitory are put off too early in the night	6.7	6.7	6.7	40.0	40.0
The library in my college is well resourced	40.0	40.0		20.0	
The equipment in the skills laboratory in my college is appropriate for student training	46.7	46.7		6.7	
The clinical take too much of students study time	6.7	26.7		66.7	
Tutors in my college teach well for student understanding	53.3	33.3	13.4		
Tutors in my college are able to complete the syllabuses of the various course	46.7	26.7		20.0	6.6
Tutors in my college relate to students professionally	53.3	40.0		6.7	
The end-of-semester exam questions in my college are comparable to the past questions for the licensing examinations	33.3	60.0		6.7	
I am happy with the mock examinations organized in my college prior to the licensing examination	46.7	46.7	6.7		
Study skills and time management					
Students belong to a study group that meets regularly to discuss academic work in my college	20.0	60.0		20.0	
Students take notes on their own in class during lectures	13.3	66.7		6.7	13.3
Students are able to answer past questions of licensing examination	40.0	53.3	6.7		
Students approach me for assistance with their academic work if they don't understand anything	13.3	53.3	13.3	20.0	
Students are punctual to class everyday	6.7	26.7		66.7	
Students read ahead of class each day	6.7	20.0	6.7	53.3	13.3
Practicability of the programme					
Students visit the library each day for further reading		26.7	6.7	66.7	
There is too much coursework than practical//clinical experience in the nursing//midwifery programme	33.3	13.3		33.3	20.0
The time interval between the end of nursing/midwifery coursework and the licensing examinations is too short	26.7	20.0		26.7	26.7
It is better if the licensing examinations are made to replace end of semester examinations in the last semester of the nursing/midwifery programme	20.0	33.3		33.3	13.3
The number of papers assessed during the licensing examinations is too much for students to cope with.	6.7	60.0		20.0	13.3

Source: Field data, 2014

On the other hand views of selected principals on the general performance of student nurses/midwives in the licensing examination indicated a consistent decline in the past five years. Outdated marking schemes and large enrollment were cited as main contributory factors. In expressing her views about the licensing examinations for student nurses/midwives in the country, one principal disclosed;

“Questions and marking scheme need overhauling and the large number of students should be controlled” (Principal, nursing training college, In-depth Interview).

From their point of view, students are not serious in the practical examination and that contribute to the failure. Other factors included non-specialty tutors for medicine and large class size at the various institutions. The principals explained;

“Students are not serious in the programme especially the practical and some of the students also don’t have science background”.

“Inadequate supervision in both practical and tuition, non-seriousness and apathy on the part of students is responsible for the poor performance”

(Principal, nursing training college, In-depth Interview).

The study further assessed the opinions of principals regarding the number of courses taken during the licensing examinations. They indicated that the papers are six out of twelve courses read. They are however broad and cut across all the courses. They were of the view that it is necessary to train the nurses to be multipurpose. One participant explained;

“The exam covers all aspects which prepare the student for effective delivery. With little infrastructure and human resources available in this country, nurses should be trained to be versatile to handle any case” (Principal, nursing training college, In-depth Interview).

According to the principals, students perform better in medical nursing, psychiatry, obstetrics, pediatric and clinical health examination papers. Papers student perform most poorly included public health and surgical nursing.

The principals recommended the following to improve the licensing examinations;

- Improvement in infrastructure and facilities
- Tutors should set questions that cut across from first to last semester and
- Training of tutors to specialize in core subjects

4.7 Factors influencing students' understanding and appreciation of the nursing programme

4.7.1 Influence of students' perceptions on level of understanding of the nursing programme

The influence of pre-entry characteristics and students' perceptions on understanding and appreciation of the nursing programme was assessed using one-way ANOVA and linear logistic regression. Four variables, which tested understanding captured under intellectual ability, were combined as the dependent variables. These were easy understanding of the content of the course, easy understanding of the guidelines for practical sessions, coursework within expectation and easiness of the clinical aspect of the programme. The dependent variable was therefore continuous on a scale of minimum 4 to a maximum of 20, with 4 and 20 being the least and most understanding respectively. The mean response was 11.11 (SD=4.04) with a range of 3.0 to 19.0.

Tables 4.12 and 4.13 present results of the influence of pre-entry characteristics on the understanding and appreciation of the nursing programme. As shown, the gender,

choice of nursing as a career and subjects studied at secondary school did not influence students' understanding and appreciation of the nursing programme. The type and location of former school attended as well as its academic status also had no influence on the understanding and appreciation of the nursing programme.

Table 4.12 Results of influence of pre-entry characteristics on understanding of nursing programme

Variable	Categories	Mean	F-statistic	P-value
Gender	Male	12.28	0.012	0.914
	Female	12.31		
Nursing as career choice	First	11.17	0.04	0.828
	Second	11.08		
	Other	11.12		
Subject studied at secondary school	Science	11.35	2.369	0.125
	Other	10.71		

Test: one way ANOVA

Table 4.13 Results of influence of pre-entry characteristics on understanding of nursing programme

Variable	F-statistic	p-value
My former school was located in an urban setting	1.157	0.326
My former school was government owned	1.297	0.275
My former school was private owned	0.886	0.449
My former school was mission owned	1.174	0.319
My former school had a high academic status	1.050	0.370

Test: one way ANOVA

4.7.2 Influence of students' perceptions on social and school level factors on understanding of nursing programme

Table 4.14 also shows the analysis of influence of students' perceptions on social and school level factors on understanding of nursing programme. As shown, some of these factors influenced students' understanding and appreciation of the nursing programme. These included students' perceptions on the influence of family responsibilities on improving their performance ($p < 0.01$) and church/other social

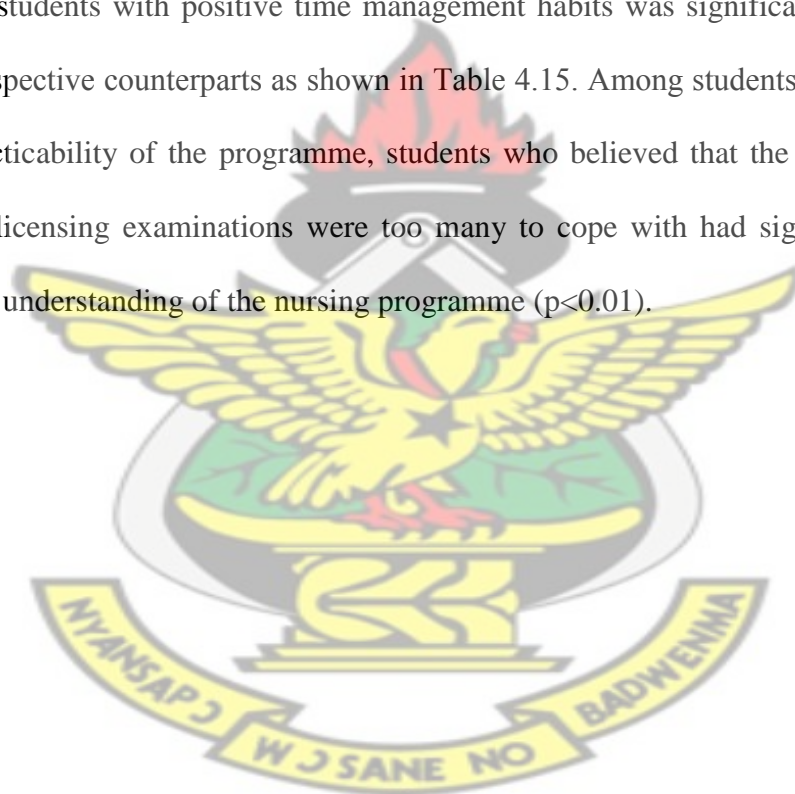
roles helping to improve their performance ($p<0.05$). Among the school level factors, the differences in mean level of understanding with respect to perceptions the clinical aspects of the programme ($p<0.01$), tutors ability to complete syllabus ($p<0.05$), tutors professional relationship with students ($p<0.05$) and the comparability of the end of semester examination to the licensing examinations were statistically significant.

Table 4.14 The analysis of influence of students' perceptions on social and school level factors on understanding of nursing programme

Variables	Response	Mean	F
Social Factors			
Family responsibilities help to improve my performance in the nursing/midwifery programme	Agree	12.99	7.353**
	Disagree	12.10	
Church/other social roles help improve my performance in the nursing/midwifery programme	Agree	12.82	5.212*
	Disagree	12.13	
I fraternize with friends a lot while the semester is in session	Agree	12.11	3.39
	Disagree	12.61	
My gender has a positive effect on my performance in the nursing/midwifery programme	Agree	12.55	1.97
	Disagree	12.17	
School Level Factors			
Class size in my college is adequate for good learning	Yes	12.58	2.162
	No	12.39	
Students don't have enough time to study on their own because lights in their hostel/dormitory are put off too early in the night	Agree	12.12	1.628
	Disagree	12.25	
The library in my school is well resourced	Agree	12.33	0.088
	Disagree	12.26	
The equipment in the skills laboratory in my college is appropriate for my training	Agree	12.58	2.483
	Disagree	12.15	
The clinical take too much of my study time	Yes	11.66	9.625**
	No	12.54	
Tutors in my college teach well to my understanding	Yes	12.04	2.223
	No	12.49	
Tutors in my college are able to complete the syllabuses of the various courses	Yes	12.62	4.637*
	No	12.01	
Tutors in my college relate to students professionally	Yes	12.76	5.380*
	No	12.06	
The end of semester examination questions in my college are comparable to the past questions of the licensing examination	Yes	12.67	5.558*
	No	11.99	
I am happy with the mock examinations organised in my college prior to the licensing examinations	Yes	12.28	0.001
	No	12.27	
Test: one way ANOVA			
*$p<0.05$;			
**$p<0.01$			

4.7.3 Influence of students' perceptions on practicability of the programme and study skills and management on understanding of nursing programme

Table 4.15 presents the analysis of influence of students' perceptions on practicability of the programme and study skills and management on understanding of nursing programme. Among the study skills and time management factors, differences in mean level of understanding of the nursing programme with respect to belonging to study group ($p < 0.05$), taking notes during class ($p < 0.01$) and reading ahead of class each day ($p < 0.05$) were statistically significant. The mean level of understanding among students with positive time management habits was significantly higher than their respective counterparts as shown in Table 4.15. Among students' perceptions on the practicability of the programme, students who believed that the papers assessed during licensing examinations were too many to cope with had significantly lower level of understanding of the nursing programme ($p < 0.01$).



**Table 4.15 Influence of students' perceptions practicability of the programme
and study skills and management on understanding of nursing programme**

Variables	Respon se	Mean	F
Study skills and time management			
I have drawn a personal time table for my private studies outside class hours	Yes	12.33	0.070
	No	12.24	
I belong to a study group that meets regularly to discuss out academic work	Yes	13.06	5.006*
	No	12.16	
I have the habit of summarizing my lecture notes when I am studying on my own	Yes	12.16	0.125
	No	12.32	
I take notes on my own in class during lectures	Yes	13.18	8.813**
	No	12.11	
I am able to answer past questions of the licensing examinations	Yes	12.41	2.084
	No	11.82	
I always approach my tutors for assistance with my academic work if I don't understand anything	Yes	12.27	0.031
	No	12.34	
I am punctual to classes every day	Yes	12.53	1.286
	No	12.18	
I read ahead of class each day	Yes	12.48	5.933*
	No	11.67	
I visit the library each day for further reading	Yes	12.33	0.020
	No	12.29	
Practicability of the programme			
There is too much coursework than practical/clinical experience in the nursing/midwifery programme	Agree	12.31	0.042
	Disagree	12.37	
The time interval between the end of the nursing/midwifery coursework and the licensing examinations is too short	Agree	12.01	2.429
	Disagree	12.50	
It would be better if the licensing examinations were made to replace the end of semester examination of the nursing/midwifery programme	Agree	12.21	0.452
	Disagree	12.41	
The number of papers assessed during the licensing examinations is too many for students to cope with.	Agree	12.25	9.202**
	Disagree	12.41	
<i>Test: one way ANOVA </i>			

4.7.4 Multivariable analysis of predictors of good understanding and appreciation of the nursing programmes

The multivariable analysis involved fitting of three models that best predicts the influence of school level factors, study skills and perception about practicability of the programme on the level of understanding. Using the backward stepwise procedure, the fitted models with the respective variables are shown in Table 4.16. The R^2 for the various models shows that the fitted variables could explain 59%, 62% and 5% of the observed relationships in models 1, 2 and 3 respectively. The F-tests of all the models also show that the models were the best fits for the data.

As shown in Table 4.16, positive perception about the comparability of the end of semester examinations to the licensing examinations was associated with an increase in the level of understanding and appreciation of the programme. Students who also agreed that there was not enough time for personal study also significantly (0.781) increase in level of understanding as compared to those who disagreed. Belonging to a study groups, having the habit of summarizing lecture notes and being punctual in class predicted a good understanding and appreciation of the nursing programmes. Having these study skills significantly increased the level of understanding and appreciation of the nursing programme. With respect to the perception about the practicability of the programme, the perception that the time interval between the end of the nursing/midwifery coursework and the licensing examinations is too short increased the level of understanding of the nursing programme as detailed in Table 4.16.

Table 4.16 Multivariable analysis of factors that predict the level of understanding of nursing programme

Variables	Estimates	95% CI	SE
Model 1 – School level factors			
Students don't have enough time to study on their own (ref=disagree)	0.912***	0.32, 1.51	0.30
The end of semester examination questions in my college are comparable to the past questions of the licensing examination (ref=disagree)	0.781**	0.11, 1.45	0.34
I am happy with the mock examinations organised in my college prior to the licensing examinations (ref=No)	-1.414*	-2.27, -0.56	0.43
Constant	12.038**	9.91, 14.17	1.08
R²	0.59		
F	9.981***		
Model 2 – Study skills			
I belong to a study group that meets regularly to discuss out academic work (ref=No)	1.39***	0.66, 2.22	0.37
I have the habit of summarizing my lecture notes when I am studying on my own (ref=No)	0.808*	0.09, 1.53	0.36
I am punctual to classes every day (ref=No)	0.872*	0.19, 1.6	0.36
Constant	11.826***	9.94, 13.71	0.96
R²	0.62		
F	11.367***		
Model 3 – Practicability of the programme			
The time interval between the end of the nursing/midwifery coursework and the licensing examinations is too short (ref=disagree)	0.94**	0.33, 1.55	0.31
Constant	10.760***	9.70, 11.82	0.54
R²	0.56		
F	8.975***		
<i>Test: Linear regression</i> *$p < 0.05$; **$p < 0.01$			

CHAPTER FIVE

DISCUSSION

5.0 Introduction

This chapter presents discussion of the major findings of the study in relation to literature. The discussions are organized under the objectives of the study. This study sought to investigate various factors that influence students' performance at the nursing and midwifery training college. The study was conceptualized around Astin (1984; 1993; 1999) model which examines the various factors considered under this study on the model of Input-Environment- Output/Outcome (I-E-O). The input as used in this model refers to the background characteristics of the student, including family background whereas the environment or focuses on the institutional resources meant to enable the learning atmosphere of the student including various programs, policies, faculties, peers and educational experiences (Astin, 1993, p. 7). The outcome is identified as the students' resultant characteristics such as knowledge, skills, critical thinking, attitudes, values, beliefs, and behaviour after being involved in the academic environment and the student's level of academic success (Astin, 1993, 1999).

5.1 Background characteristics

Majority of the student respondents were males and the mean age was 21 years. Majority, 68.5% of them were between 20 and 24 years and more than 90% were Christians Responses from the students show that majority of their parents had high level of education. About 24.5% described their parents' income whereas 39% described as average.

5.2 Influence of study related factors on students' performance

Students' study skills and abilities influence their learning outcomes. Although studies on the influence of intelligence on learning have produced inconsistent results, there is still the notion that intelligence influence learning. On the other hand, intelligence could be affected by factors such as personality, motivation and the social, home and educational environment (Entwistle, 2005). This study explored student personal factors, including their learning skills and motivation that influence learning outcomes. The heads of the nursing institutions disclosed that students' efforts at studies are insufficient, especially with the practical examinations and this is partly a cause of the poor performance.

The results showed a good level of understanding among the students with regards to the course content and guidelines. Majority of students found it easy to understand the content of the course in the nursing programme, and the guidelines meant for clinical sessions were easy to understand for majority of the student. About 60% also believed that the coursework was within their expectations. This was supported by responses from majority of the tutors who also believed that students understand the course and guidelines. However some students had difficulties with the course and this could affect their performance in the licensing examinations. About 38% did not understand the content of the course and 24.6% did not understand the guidelines for practical lessons whereas 29.3% also believed that the coursework was beyond their expectations. Some tutors also supported to this, with 26.7% and 20% indicating that students do not understand the course content and the guidelines respectively. These gaps between students' expectations and what the course entails coupled with their misunderstanding of practical lesson guidelines could influence their performance.

As indicated by Welsh (2010), students' interests, motivation and drive in a course influence their class attendance and overall academic performance. It is imperative therefore that nursing training institutions assess students' expectations about the programme, how they meet these expectations and help students to adopt and appreciate the programme in order to enhance positive learning outcome. Students' level of understanding and appreciation of the course was assessed in relation to their pre-entry characteristics and their perception about the nursing programme.

The study further revealed high level of stress and anxiety among the students with respect to the semester and the licensing examinations. The combination of classroom work with practical was also a problem for some of the students (40.5%). More than 75% of tutors interviewed also confirmed this stress and anxiety during semester and licensing examinations. These stress and anxieties could have negative influence on their performance in the licensing examinations. Stress can disrupt learning and memory development as it forces the brain to revert to more primitive survival needs (Thelearningplace, 2012). Minimizing stress could foster creativity and learning, and educators should make a priority to minimize stressful situations.

5.3 Influence of learning environment on students' learning outcomes

Institutional policies and infrastructure influence student experiences and outcomes during their studies. These included academic support services such as academic curricular and extracurricular activities, physical facilities and faculty interaction and non-academic support services which are considered as services that related to financial support and scholarship and accommodation and other support services. Some students in this study had issues with the programme. Majority believed that there was too much coursework than practical/clinical experience in programme time

interval between the end of the nursing coursework and the licensing examinations is too short and the number of papers assessed during the licensing examinations is too many for students to cope with. This was also supported by views from the tutors where majority agreed to these assertions. Some of the students also expressed worry about the inability of tutors to complete syllabus; probably due to its volume. Interestingly, about 26.6% of the tutors corroborated to this. Most of the students also agreed that the papers assessed during licensing examinations were too many to cope with. These are practical issues that could have direct impact on students' understanding and their academic performance and therefore needs critical attention if students' performance in the licensing examination is to be improved. The bivariate analysis for instance showed that students who believed that the papers assessed during licensing examinations were too many to cope with had significantly lower level of understanding of the nursing programme.

Learning environment, comprising physical facilities such as libraries, textbooks, learning and teaching materials are important factors to facilitate students learning and overall academic achievement (Harmon & Wales, 1999; Mavondo et al., 2000). As indicated by Bennett (2011), it is the responsibility of the educational institution to ensure that the entire campus provides a learning space to facilitate academic work. This study assessed the perception of students about the learning environment and facilities at the nursing and midwifery training college. Student's perception of the learning environment is known to have a higher impact on achievement than their academic ability (Jansen and Bruinsma 2005). Swoope (1995) also concluded that students' satisfaction with the university was due to their satisfaction with the academic environment, their satisfaction with the open, comfortable learning

environment provided by professors; and by large, their satisfaction with the social environment within the university.

The outcome of this study revealed satisfaction among majority of the students with respect to their learning environment. However, about 26.8% disagreed and attributed this to noise on the environment, citing classrooms near to roadside and lack of facilities and equipment necessary to promote academic success. These distractions to learning could negatively impact the learning outcomes in the respective institutions. A study by Plant et al (2005), found that students who studied alone in a distraction-free environment performed better college overall. Citing classrooms by the roadside as stated by some students in the study could expose the students to noisy environment that will hamper smooth academic work.

Aside the serenity of learning environment, the availability of requisite physical facilities such as classroom, laboratories, library and offices are fundamental requirements of any educational institution (Basavanthappa, 2003). These are essential to carry out education programmes effectively. According to the World Education Report (1993) physical facilities are pre-requisite for quality education and ensures good student outcome. These include demonstration room, residential accommodation, classroom furniture (tables and chairs) spacious dining hall are very necessary for quality education and good student performance in the health training institutions.

This study revealed that students' satisfaction with infrastructure and physical facilities was not universal and this could negatively influence learning outcomes especially in a nursing and midwifery programme, which involve both theoretical and practical training. Although majority believed that the libraries were well resourced,

about 28% disagreed to that and about 40% were also not satisfied with the equipment in the skills laboratory in their colleges. However most of the tutors believed the laboratories were well equipped for student training. More than 50% also stated that large class sizes in their colleges do not give them the chance to benefit from good teaching and this could have negative influence on their licensing examinations. This was corroborated by responses from the tutors where more than 75% also agreed that large class sizes were hampering smooth learning activities. The principals also believe that the large number of students must be controlled to enhance performance in the licensing examinations.

Basavanthappa (2003) agrees that physical facilities such as classroom, laboratories, library and offices are fundamental requirements of any educational institution and further argued that the number of classrooms should be sufficient to permit the scheduling of classes in keeping with its educational principles. Adequate number of classrooms will ease congestion and ensure class control by tutor and effective teaching and learning. To foster smooth teaching and learning however, there is also the need for library services which are equipped with new teaching technologies electronic information such as up-to-date textbooks, journals, high speed internet access, LCD projectors, computer labs, visual and audio equipment to facilitate student learning (ACC, 2009; Heyneman, 2001, p. 348).

5.4 Tutor related factors that influence students' performance

Students' performance in an academic setting is also influenced by factors relating to the tutor. Tutors expectations about student's performance and their motivation have been shown to be critical in improved student outcomes (Welsh, 2010). Tutors, who

are expected to impart to the students must have higher and quality education to be in a position to guide and motivate the students to academic success.

Previous studies including Greenwald et al (1996) and Hanushek (1996) have demonstrated a positive correlation between the quality of lecturers in nursing education and student achievement. The role of a good teacher has been described in literature to be that of a facilitator, assessor, participant, and motivator (Par, 2005). Most of the staffs interviewed held university degree (first degree or masters) and about 46.7% had worked at the facility for 21 to 30 years. About 60% taught for up to 10hours a week while 26.7% taught from 11 to 20hours a week. Majority of the tutors showed some affinity for the job and had high motivation for tutoring. All the tutors interviewed indicated that becoming a nurse/midwife educator was a dream come through while about 80% indicated that they will always choose that career when giving the opportunity. All the tutors also disclosed that they did not choose the job because they wanted to escape the workload at the health facility. This is a positive indication for improving student's outcome in the institution. However other factors such as compensation and nature of work would have to come into play to contribute to students' success in the licensing examinations.

On the other hand, majority of the tutors were agreement that, the combination of classroom work and clinical supervision makes their jobs difficult. Looking at the critical role they place in students' educational attainment, one would expect they are able to deal with the difficulty and stress of the job especially with the theory clinical/combination. As indicated by Afe (2011), tutors play a crucial role in educational attainment because the teacher is ultimately responsible for translating educational policies and principles into actions based on practice during interaction

with the students. This indicates that although the tutors have strong motivation for the job, the functions and nature of job makes it difficult for them. This could be a reason why their motivations are not translated into an improvement in the outcome of the licensing examinations.

Satisfaction of students about the teaching strategies adopted by tutors was not very high in this study. This was attributed to the appropriate measures used by lecturers, friendly relationships existing and good teaching methods. Some students also indicated that some lectures focused on selling handouts instead of giving detailed lectures. This indicate that some tutors do not provide detail explanations to the teaching content and do not present study materials in small steps and allow application after each step, which are necessary for promoting students' academic success McInerney (2000). This might be a contributing factor to the decline in students' performance in the licensing examination. Tutors are key players in determining students' successes. They must therefore strive to put in their best since the successes of the students in the licensing examinations greatly depends on them.

5.5 Influence of background and prior admission characteristics on learning outcome

Non-academic or demographic characteristics of students have been cited as important variables in predicting academic performance of the students (Lytle, 2007, Platt et al., 2001, Tanya, 2009, Trofino, 2013). The understanding of the relationship between student-related factors and academic performance and predictors of student's success in nursing schools is not only important for the nursing institutions but also students, parents and the society as a whole. This will enable parents and counsellors give students better-informed advice on choosing their college programmes, and

students are able to better understand their potentials and make wiser decisions for their future. This study assessed the background characteristics of students including parents' educational and financial background. Parental education as well as employment background is important factor that significantly affects students' academic success (McKenzie & Schweitzer, 2001; Bruinsma & Jansen, 2007). Melby and Conger (1996) also opine that family income, parental education and parental involvement have an influence on the academic experience of students in their secondary and post-secondary education.

Responses from the students show that majority of their mothers had up to secondary school education whereas majority of their fathers had tertiary education. This is a good indication for the level of support these students would receive from the parents, who themselves had high levels of education. Based on previous researches on relationship between parents' educational background and students' performance (Jeynes, 2002), the students whose parents had higher educational levels would be expected to perform better. As indicated by McMillan & Western (2000), based on the cultural capital theory, students who come from well-educated families will obtain success. Although majority of students' parents had high level of education, this had not translated into the level of performance in the licensing examinations and could be as a result of other factors that have much weight in terms of contributing to performance in the licensing examinations.

With respect to employment and financial background, most of the students indicated that their mothers were traders or businessmen, 24.2% were public or civil servants whereas 45.8% were their fathers were public or civil servants. Very few students had parents who were health workers. About 24.5% described their parents' income as

sufficient whereas 39% described it as average. Generally, the social economic background, which involves educational and financial background, is one of the major components of educational quality. It is believed that academic success strongly depends on the social economic status of parents who economically foster their children to get academic achievement (Graetz, 1995; Considine & Zappala, 2002; Eamon 2005; Jeynes, 2002).Jeynes (2002) also stated that occupational status and income level are associated with academic performance. Students whose parents are financially sound are expected to have the necessary support for their studies, which could influence their performance in the licensing examinations.

Potolsky, Cohen and Saylor (2003) also evaluated two factors relating to academic performance for first semester nursing students. The study found academic performance on the science courses to correlate significantly with nursing school performance in the first year. This study however failed to include demographic and background information on the participants. Previous studies on prior schooling predictive variables have shown an influence of students' courses and grades at the secondary or high school on their performance in the nursing training institutions. This includes the study by Tanya (2009), which found an influence of pre-admission science scores and health-related coursework on success in nursing training programme. The outcome of this study revealed that not all the students read science prior to their admission into the nursing programme. According to the results, about 36.7% read General Science during Senior High School education whereas 32.8% and 15.8% read General Arts and Home Economics respectively. Although previous subjects studied did not have significant influence on understanding of the nursing programme, students who had no science background might have difficulties adjusting and understanding the programme and this might influence their

performance. During interview with principals, they also disclosed that some students do not have science background and they believe is contributing to the poor performance.

“Students are not serious in the programme, especially the practical. Some of the students also don’t have science background” (Principal, nursing training, In-depth Interview).

It is recommended that nursing institutions consider students’ background prior to admission since this could go a long way to influence their performance in licensing examinations. Interviews with the heads of the nursing institutions confirmed the decline in performance in the licensing examinations and the background of students shows that their courses at the secondary school could have some relationship with the performance decline. Other studies by Lytle (2007) and Murden et al. (2010) have also reported an influence of prior admission subjects and grades in students’ performance in higher education.

Students’ motivation and reasons behind choosing the nursing programme could also influence their performance. Some students enter programmes because that is the only available alternative but not because they have the passion and motivation to follow the programme. The nursing profession, which involves patients’ care, require much commitment and passion on the part of the nurse and therefore demands that one truly appreciates the programme and have the motivation to become a nurse. In this study, the students major reasons for choosing to offer nursing programme included wanting to be a professional nurse. However, some students entered because they believed nursing was a secure job whereas others opted for it because they were not getting accepted in other career choices. Admission in a nursing programme is the first step for entering in the nursing profession. Identifying and recruiting students who are

most likely to succeed in the nursing Programme is an important role of the admission criteria. It is imperative that nursing institutions institute strict mechanisms that could ensure that only students with the right background, motivation and drive are admitted.

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CHAPTER SIX

CONCLUSION AND RECOMMENDATIONS

This chapter presents the conclusions of the study based on the findings and make recommendations for improving the current situation.

6.1 Conclusions

6.1.1 Influence of study related factors on students' performance

Student level factors such as their study skills (belonging to a study group, summarizing lecture notes and being punctual in class) influence understanding and appreciation of the nursing programme. There was also high the level of stress and anxiety among the students with respect to the semester and the licensing examinations and the combination of classroom work with practical was a problem for some of the students. Some students also had problems understanding the content and guidelines for practical lessons and these could influence their performance in the licensing examinations. However, personal study skills were quite good as most students drew personal for private studies, belong to a study group that meet regularly to discuss out academic work and solved past questions on licensing examinations.

6.1.2 Influence of learning environment on students' learning outcomes

In conclusion, existing learning environmental factors such as perception about the practicability of the nursing programme influenced students understanding of the nursing programme. In conclusion, the programme package was a problem for some students. The programme was described as too theoretical and voluminous with less practical or clinical experience and some tutors being unable to complete syllabus. Satisfaction with the learning environment was generally high. Nevertheless, some students believed the environment was noisy, facilities were inadequate and skills

laboratories were under resourced. Both students and tutors complained about large class size, which obstructed smooth learning process.

6.1.3 Tutor related factors that influence students' performance

The level of supervision offered by tutors influenced students' performance in the licensing examinations. The principals believed supervision of students in both tuition and practical were inadequate contributing to low performance. The study outcome shows that the tutors had positive motivation for the job although this was marred by the difficulty in dealing with the combination of classroom work and clinical supervisions, therefore contributing to low student performance. Satisfaction of students about the teaching strategies adopted by tutors was low in this study with some students complaining about tutors focus on selling handouts.

6.1.4 Influence of background and prior admission characteristics on learning outcome

None of the background and prior admission characteristics had significant influence on students understanding and appreciation of the nursing programme. This study revealed that majority of the students had parents with good educational and financial background although some students had parents with no formal education. Not all the students read General science at the previous educational level with 32.8% and 15.8% reading General Arts and Home Economics respectively. Students who had science background have comparatively higher mean level of understanding of the programme although it wasn't statistically significant.

6.2 Recommendations

This section presents the recommendations of the study based on the major findings.

Ministry of Health/Ghana Health Service

- In order to improve the learning environment to enhance learning outcomes, there should be improvement in infrastructure and facilities at the various nursing training institutions especially with libraries and practical training laboratories
- The practical training guidelines should be simplified to the understanding of all students. This will make students appreciate the practical, which is an essential component of their training
- The environment should be considered when citing nursing training institutions to ensure campuses are properly cited to enhance students have serene environment for academic work

Nursing training institutions/ Tutors

- The number of intake should be controlled. This will help curb the situation of large and congested classes, which hinder academic delivery. This will also reduce the workload on the tutors and help improve their delivery.
- Low level of tutor supervision contributes to low performance of students in the licensing examination. Tutors should therefore be trained and equipped to be able to offer the necessary supervision for students especially with their practical training
- Tutors should be monitored and supervised to ensure they put in the necessary effort to deliver the course content to the understanding of students. There

should also be periodic evaluation of tutors performance and motivation schemes instituted to motivate tutors put in their best in training the students

Students

- Good study skills such as summarizing lecture notes have shown to influence students understanding of the programme. Students should adopt positive study attitudes to help them understand the programme and eventually contribute to their performance in the licensing examination.
- Belonging to a study group also shown to influence students' understanding of the nursing programme. Students should also form study groups for purpose of discussions and enhancing better understanding of study topics.

Further studies

- Further study on the subject matter using larger study sample and the actual students' performance in the licensing examinations as outcome variable is recommended to inform policy decisions on how to avert the trend of poor performance in the licensing examinations.

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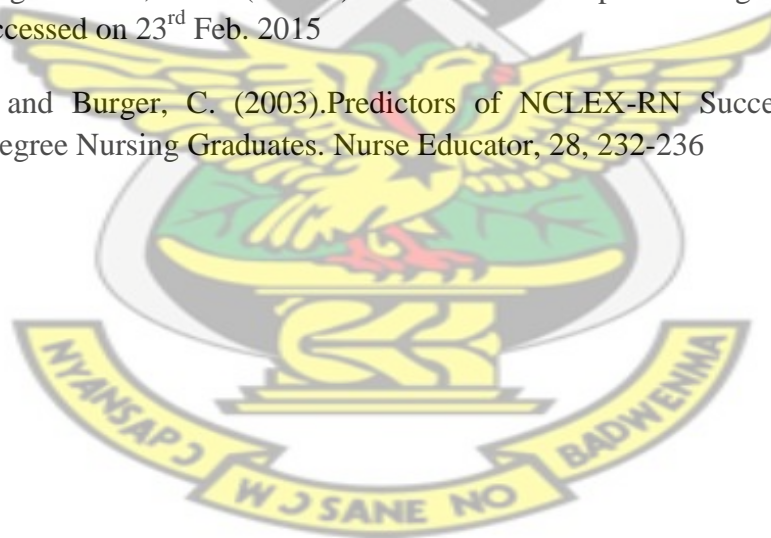
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APPENDIX I: Questionnaire for Nursing Students

KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY,

KUMASI

COLLEGE OF HEALTH SCIENCES

SCHOOL OF MEDICAL SCIENCES

DEPARTMENT OF COMMUNITY HEALTH

Research Title: Factors Affecting Performance in the

Nursing Licensure Examination among Diploma Graduates in Ashanti Region

QUESTIONNAIRE FOR NURSING STUDENTS

Good morning/afternoon. I am a student at School of Medical Sciences, KNUST. I would like to ask you some questions about “**Factors Affecting Performance in the Nursing Licensure Examination among Diploma Graduates in Ashanti Region**”. Your opinions are highly essential at the same time vital as they will help us to improve teaching and learning in the various nursing training colleges. Whatever you say will be treated confidential, so feel at ease to express your candid opinion. Be assured that your responses will not in any way be linked to your identity. You are kindly requested to answer the questions below by indicating a tick or writing the appropriate answer when needed. **THANK YOU**

Questionnaire number:

Date of Interview:

SECTION A: BACKGROUND CHARACTERISTICS (tick where appropriate)

1. **Gender** a. Male () b. Female ()

2. Age on commencement of nursing course

Less than 20 years	
21-25 yrs	
26-30 yrs	
31-35 yrs	
Other: Please specify	

3. **Religion of Student**

Christian () b. Moslem () c. Traditionalist () d. Free thinker ()

SECTION B: STUDENT'S PRIOR ADMISSION CHARACTERISTICS

4. **Nursing as a career choice**

First Choice	
Second Choice	
Third Choice	
Fourth Choice	
Other: Please specify	

5. **Why did you choose nursing as a career?**

I always wanted to be a professional nurse	
Nursing is a secure job	
Student allowance is available which pays for the training	
Did not get accepted for other career	
Other: specify	

6. What was your entry category into the nursing programme?

4a.	SSSCE	
	WASSCE	
4c	Matured (with previous nursing background)	
4d	Matured (without nursing background)	

7. What course did you read during your high school education?

5a.	Science	
5b	Arts	
5c	Home economic	
5d	Agric	
5e	Other: please specify	

8. Please indicate your grade in the following subjects

Subject	WASSCE	SSSCE	NA
Core mathematics			
Integrated Science			
English (core)			
Biology			

9. To what extent do you agree to the following statements about your former school?

	Yes	No	Yes	No
my former school was located in an urban setting				
My former school was government owned				
My former school had a high academic status				

SECTION C: SCHOOL-RELATED FACTORS INFLUENCING STUDENT LEARNING

Please mark with X

10. How much time per day do you spend on your studies (own private study time)?

One Hour	
Two Hours	
Three Hours	
> three hours	

11. Indicate if you agree with the following statement.

I am satisfied with the teaching strategies used by the lecturers?

Please comment:

.....

.....

.....

.....

12. Is the learning environment conducive to learning? Yes [] No []

If NO to question 12, please specify

13. Would you like to see improvements or adjustments made to the learning?

14. Yes [] No []

If YES to question 13, please specify

.....

.....

.....

.....

15. Do you obtain adequate academic support?

Always	Most times	Seldom	Never

16. Are you able to apply the theory taught in class in the practical training? You apply the theory taught

Always	Most times	Seldom	Never

Please continue on next page



Answer **Yes or No** to the following questions by ticking the spaces provided

17. No.	Level of Stress	Yes	No
18.	The classroom work combined with the clinical I am undertaking makes the programme difficult		
19.	I constantly feel stressed/anxious during end of semester examination		
20.	I am frightened by the licensing examinations		
21. No.	Intellectual Ability	Yes	No
22.	I find it easy to understand the content of the courses in the nursing/midwifery programme		
23. No.	Social Factors	Yes	No
24.	I fraternize with friends a lot while the semester is in session		
25.	I enjoy attending entertainment activities organised in town		
No.	School Level Factors	Yes	No
26.	The large class size in my college does not give me the chance to benefit from good teaching		
27.	Students don't have enough time to study on their own because lights in their hostel/dormitory are put off too early in the night		
28.	The library in my school is well resourced		
29.	The equipment in the skills laboratory in my college is appropriate for my training		
30.	The clinicals take too much of my study time		
31.	Tutors in my college teach well to my understanding		
32.	Tutors in my college are able to complete the syllabuses of the various courses		
33.	Tutors in my college relate to students professionally		
34.	The end of semester examination questions in my college are comparable to the past questions of the licensing examination		
35.	I am happy with the mock examinations organised in my college prior to the licensing examinations		
No.	Study skills and time management	Yes	No
36.	I have drawn a personal time table for my private studies outside class hours		
37.	I belong to a study group that meets regularly to discuss out academic work		
38.	I have the habit of summarizing my lecture notes when I am studying on my own		
39.	I take notes on my own in class during lectures		
40.	I am able to answer past questions of the licensing examinations		
41.	I always approach my tutors for assistance with my academic work if I don't understand anything		
42.	I am punctual to classes every day		
43.	I read ahead of class each day		
44.	I visit the library each day for further reading		

To what extent do you agree or disagree with the following statement?

No.	Level of stress	Strongly agree	Agree	Mod agree	Disagree	Strongly disagree
1.	The classroom work combine with the clinical practice makes the programme difficult					
2.	The guidelines meant for clinical sessions are easy for me to understand					
3.	The coursework in the nursing and Midwifery programme is beyond my expectation					
4.	The clinical aspect of the nursing/midwifery programme is the easiest part of training					
5.	The relevance of the coursework in the nursing/midwifery programme is questionable					
6.	The clinical aspect of the nursing programme is the easiest part of the training					
7.	The relevance of the coursework in the nursing/midwifery programme is questionable					
	Social factor	Strongly agree	Agree	Mod agree	Disagree	Strongly disagree
8.	Family responsibilities help to improve my performance in the nursing programme					
9.	Church/other social roles help improve my performance in the nursing programme					
10.	My gender has a positive effect on my performance in the nursing and midwifery programme					
11.	Family responsibilities help to improve my performance in the nursing/midwifery programme					
12.	My gender has a positive effect on my performance in the nursing/midwifery programme					
13.	Church/other social roles help improve my performance in the nursing/midwifery programme					
	School level factors	Strongly agree	Agree	Mod agree	Disagree	Strongly disagree
14.	The large class size in my college					

	does not give me the chance to benefit from good teaching					
15.	The library in my school is well resourced					
16.	The equipment in the skills laboratory in my college is appropriate for my training					
17.	The Clinical practice takes too much of my study time					
18.	Tutors in my college teach well to my understanding					
19.	Tutors in my college are able to complete the syllabi of the various course					
20.	Tutor in my college relate to students professionally					
21.	The end of semester examination questions in my college are comparable to the past questions of the licensing examination					
	Practicability of the programme	Strongly agree	Agree	Mod agree	Disagree	Strongly disagree
22.	There is too much coursework than practical/clinical experience in the nursing/midwifery programme					
23.	The time interval between the end of the nursing/midwifery coursework and the licensing examinations is too short					
24.	It would be better if the licensing examinations were made to replace the end of semester examination of the nursing/midwifery programme					
25.	The number of papers assessed during the licensing examinations is too many for students to cope with					

Thank you

APPENDIX II: Interview Guide for Key Informant Interview

I want to thank you for taking the time to meet with me today. My name is _____ and I would like to talk to you about your views on the on **Factors that Influence the Performance of Nursing Students in Licensure Examination**. The interview should take less than an hour. I will be taping the session because I don't want to miss any of your comments. Although I will be taking some notes during the session, I can't possibly write fast enough to get it all down. Because we're on tape, please be sure to speak up so that we don't miss your comments. All responses will be kept confidential. This means that your interview responses will only be shared with research team members and we will ensure that any information we include in our report does not identify you as the respondent. Remember, you don't have to talk about anything you don't want to and you may end the interview at any time.

Are there any questions about what I have just explained?

Are you willing to participate in this interview?

Interviewee

Witness

Date

1. Can you please tell me the number of years who have worked as a principal in this institution as a principal.....

2. What do you know about the general performance of student nurses/midwives in the licensing examination?

3. What is your view, if any about the licensing examinations for student nurses/midwives in the country?

.....

4. How many papers do the licensing examinations examine nursing/midwifery candidates on?.....
.....

5. (a) Do you consider this number to be too much or too few?
.....

(b) Provide reasons for your response to
.....
.....

6. In which papers do student nurses/midwives in your institution perform well?
.....
.....

7. In which papers student nurses/midwives in your institution perform most poorly?
.....
.....

8. (a) In your opinion what could be three major factors responsible for the trend of performance you have observed?.....
.....

(b) Please, explain further:.....
.....

Do you have any recommendations to remedy the situation?
.....

9. Do you have any other anecdotal comments?.....
.....

Thank you for your time

APPENDIX III: Questionnaire for Nursing Tutors

COLLEGE OF HEALTH SCIENCES

SCHOOL OF MEDICAL SCIENCES

DEPARTMENT OF COMMUNITY HEALTH

Research Title: Factors Affecting Performance in the
Nursing Licensure Examination among Diploma Graduates in Ashanti Region

NURSING TUTOR'S QUESTIONNAIRE

Good morning/afternoon. I am a student at School of Medical Sciences, KNUST. I would like to ask you some questions about “**Factors Affecting Performance in the Nursing Licensure Examination among Diploma Graduates in Ashanti Region**”. Your opinions are highly essential at the same time vital as they will help us to improve teaching and learning in the various nursing training colleges. Whatever you say will be treated confidential, so feel at ease to express your candid opinion. Be assured that your responses will not in any way be linked to your identity. You are kindly requested to answer the questions below by indicating a tick or writing the appropriate answer when needed. **THANK YOU**

Questionnaire number:

Date of Interview:

Gender a. Male () b. Female ()

Number of years in teaching nursing students

Less than 5 years	
6-10 years	
11-20 years	
21-30yrs	
> 30 years	

Highest academic qualification:.....

Highest professional qualification (rank):.....

Number of years of teaching experience:.....

Subject Area taught:.....

Number of hours you teach per week:.....

TUTOR'S ANDRAGOGY

1. Does the program/faculty reinforce the importance of the need to learn a nursingtopic? Yes [] No []

If yes, give an example of the how the importance of learning nursingconcepts was presented in the students' learning process.

.....
.....

2. Do the program/faculty provide opportunities to learn the nursing process throughhands-on activities? Yes [] No []

If yes, which hands-on activities do you feel benefit thestudents' learning process the most?

.....
.....

3. Are the students given opportunities to problem solve in the learning process?

Yes [] No []

If yes, which problem solving activities do you feel benefit the student the most in the learning process?

.....

.....

4. Are the students offered immediate rewards of gratification during the learning process? Yes [] No []

If yes, which rewards are provided to give the students the most incentive to learn?

.....

.....

5. What internal factors do you feel are the most influential in giving students motivation to learn?

Answer **Yes** or **No** to the following questions by ticking in the spaces provided

No.	Motivation	Yes	No
1.	Becoming a nurse/midwife educator is a dream come through		
2.	Given the opportunity I will always choose to be a nurse/midwife educator over any other career		
3.	I started with the nursing/midwifery profession because of the influence of my parents/friends		
4.	I decided to become a nurse/midwife educator because of the workload in the health facilities		
5.	I would like to become a clinical nurse		
6.	I choose to become a tutor because I could not get the opportunity to return to my original post		
32.	Students are able to answer past questions of licensing		

	examination		
33.	Students approach me for assistance with their academic work if they don't understand anything		
34.	Students are punctual to class everyday		

Please indicate your degree of agreement and disagreement with each of the following statements below:

No.	Level of Stress	Strongly agree	Moderately agree	Agree	Disagree	Strongly Disagree
7.	The classroom work combined with the clinical supervision/work I am undertaking makes the job difficult					
8.	Some of my students constantly feel stressed/anxious during end of semester examinations					
No.	Intellectual ability of students	Strongly agree	Moderately agree	Agree	Disagree	Strongly Disagree
10.	My students find it easy to understand the content of the course in the nursing/midwifery programme					
11.	Guidelines meant for clinical sessions are easy for my students to understand					
12.	The coursework in the nursing/midwifery programme is beyond the expectation of my students					
13.	The theoretical aspect of the nursing/midwifery programme is the easiest part of my students training					
14.	The relevance of the coursework in the nursing/midwifery programme is questionable					

No.	Social Factors	Strongly agree	Moderately agree	Agree	Disagree	Strongly Disagree
15.	Family responsibility helps to improve my students performance in the nursing/midwifery programme					
16.	Church/other social roles help to improve my students performance in the nursing/midwifery programme					
17.	My students fraternize a lot with friends while the semester is in session					
18.	My gender has positive effect on my students performance in the nursing/midwifery programme					
19.	My students enjoy attending entertainment programmes organised in town					
No.	School level factors	Strongly agree	Moderately agree	Agree	Disagree	Strongly Disagree
20.	The large class size in my college does not give students the chance to benefit from good teaching					
21.	Students don't have enough time to study on their own because lights in their hostel/dormitory are put off too early in the night					
22.	The library in my college is well resourced					
23.	The equipment in the skills laboratory in my college is appropriate for student training					
24.	The clinicals take too much of students study time					
25.	Tutors in my college teach well for student understanding					
26.	Tutors in my college are					

	able to complete the syllabuses of the various course					
27.	Tutors in my college relate to students professionally					
28.	The end-of-semester exam questions in my college are comparable to the past questions for the licensing examinations					
29.	I am happy with the mock examinations organised in my college prior to the licensing examination					
No.	Study skills and time management	Strongly agree	Moderately agree	Agree	Disagree	Strongly Disagree
30.	Students belong to a study group that meets regularly to discuss academic work in my college					
31.	Students take notes on their own in class during lectures					
32.	Students are able to answer past questions of licensing examination					
No.	Practicability of the programme	Strongly agree	Moderately agree	Agree	Disagree	Strongly Disagree
36.	Students visit the library each day for further reading					
37.	There is too much coursework than practical//clinical experience in the nursing//midwifery programme					
38.	The time interval between the end of nursing/midwifery coursework and the licensing examinations is too short					
39.	It is better if the licensing examinations are made to replace end of semester					

	examinations in the last semester of the nursing/midwifery programme					
40.	The number of papers assessed during the licensing examinations is too much for students to cope with.					

KNUST

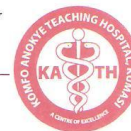


APPENDIX IV: Letter of Approval



KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY
COLLEGE OF HEALTH SCIENCES

SCHOOL OF MEDICAL SCIENCES / KOMFO ANOKYE TEACHING HOSPITAL
COMMITTEE ON HUMAN RESEARCH, PUBLICATION AND ETHICS



Our Ref: CHRPE/AP/284/14

22nd August, 2014.

Ms. Annabella Agyemang-Dankwah
Department of Community Health
School of Medical Sciences
KNUST-KUMASI.

Dear Madam,

LETTER OF APPROVAL

Protocol Title *"Factors Affecting Performance of Nursing Licensing Examination of Diploma Graduates in Ashanti Region".*

Proposed Site: *Komfo Anokye Nurses' and Midwifery Training College, SDA Nurses and Midwifery Training College, Agogo Presbyterian Nurse Training College and Premier Nursing Training College, Ashanti Region.*

Sponsor: *Principal Investigator.*

Your submission to the Committee on Human Research, Publications and Ethics on the above named protocol refers.

The Committee reviewed the following documents:

- A notification letter of 14th April, 2014 from the Ashanti Regional Health Directorate (study site) indicating approval for the conduct of the study in the Region.
- A completed CHRPE Application Form.
- Participant Information Leaflet and Consent Form.
- Research Proposal.
- Questionnaire.
- Interview Guide.

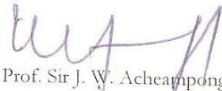
The Committee has considered the ethical merit of your submission and approved the protocol. The approval is for a fixed period of one year, renewable annually thereafter. The Committee may however, suspend or withdraw ethical approval at anytime if your study is found to contravene the approved protocol.

Data gathered for the study should be used for the approved purposes only. Permission should be sought from the Committee if any amendment to the protocol or use, other than submitted, is made of your research data.

The Committee should be notified of the actual start date of the project and would expect a report on your study, annually or at the close of the project, whichever one comes first. It should also be informed of any publication arising from the study.

Thank you Madam, for your application.

Yours faithfully,



Osomfuor Prof. Sir J. W. Acheampong MD, FWACP
Chairman

KNUST



Appendix V: Letter of Introduction to the Regional Director for Health



KWAME NKUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY
COLLEGE OF HEALTH SCIENCES
SCHOOL OF MEDICAL SCIENCES
DEPARTMENT OF COMMUNITY HEALTH

SMS/COH/M11

21st March, 2014

REGIONAL DIRECTOR FOR HEALTH
HEALTH FACILITIES AND NURSES
TRAINING COLLEGES
ASHANTI

Dear Sir/Madam,

LETTER OF INTRODUCTION

This is to introduce to you, **Annabella Agyemang-Dankwah** an MPH Health Services Planning and Management student from the Department of Community Health, School of Medical Sciences, Kwame Nkrumah University of Science and Technology.

She needs some background information from your outfit to develop her MPH thesis proposal.

We would be grateful if you could accord her your maximum co-operation and support.

Thank you.

Yours sincerely,

Dr. Harry TAGBOR
Head of Department

**Appendix VIII: Letter of Introduction to the Metro/Municipal/DHDs, Health
Facilities and NTCs**

In case of reply the number
and the date of this letter
should be quoted.

Tel: 0322022089/0322023651

Fax: 03220-26219

E-mail:

rdhs.ar@ghsmai.org

My Ref. No. KG/HIU/37

Your Ref. No.....



GHANA HEALTH SERVICE
REG. HEALTH DIRECTORATE
P. O. BOX 1908
KUMASI - ASHANTI.

14th April, 2014

METRO/MUNICIPALS/DHDs
HEALTH FACILITIES AND
NURSES TRAINING COLLEGES
ASHANTI

Dear Sir / Madam

LETTER OF INTRODUCTION


This is to introduce to you, **Annabella Agyemang-Dankwah** an MPH Health Services Planning and Management student from the Department of Community Health, School of Medical Sciences, Kwame Nkrumah University of Science and Technology.

She needs some background information from your outfit to develop her MPH thesis proposal.

I shall be grateful if you could accord her your maximum co-operation and support.

Thank you

Yours faithfully


DR. JOSEPH ODURO
DEPUTY DIRECTOR (PH)
For: REG. DIR, OF HEALTH SERVICE
ASHANTI.