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Full Length Research

Attitude and Clinical Environment as Predictors of Registered Nurses' Clinical Performance in Ghana.

[1*]Ruth Benson, [2]Richard Osei Amaniampong, [1]Isaac Amankwaa

[*1]Garden City University College, Kumasi, Ghana
Email: ruth_bbenson@outlook.com
[2]St. Michael's Hospital, Jachie Pramso, Kumasi, Ghana
Email: amaniampong24@gmail.com
[1]Garden City University College, Kumasi, Ghana
Email: amank978@gmail.com
*Corresponding author's address and E-mail: Garden City University College, Kumasi, Ghana
Email: ruth_bbenson@outlook.com

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The clinical performance of nurses largely affects the quality of any healthcare institution. This study assessed the relationship between attitude, clinical environment and registered nurses' perception of clinical performance in the Ashanti Region of Ghana. A descriptive correlation study was conducted among 200 registered nurses from 4 public hospitals in the Ashanti Region of Ghana. Data on clinical performance was assessed with the International Council of Nurses (ICN) competency framework. Bivariate correlations were assessed using Pearson correlation. Multiple regression was used to determine the predictors of registered nurses' clinical performance considering attitude, clinical environment and moderator variables. Two ('positive' and 'negative') and three ('clinical supervision', 'learning opportunity' and 'interpersonal relationship') factors explained attitude of nurses and the clinical environment respectively whereas clinical performance was explained by 'professional, ethical, legal and quality development', 'clinical provision and management of clients' and 'clinical provision, planning and evaluation'. Professional, ethical, legal practice and quality development was predicted by negative attitudes, clinical supervision and interpersonal relationship. Per 1 score standard deviation (SD) of negative attitudes, the score of professional, ethical, legal practice and quality development decreased by 0.169 (ß; 95% CI=-0.169; -0.284, -0.052). Clinical provision, planning and evaluation was predicted by clinical supervision, learning opportunity and interpersonal relationship. Findings of this study show that the attitude of the nurses, clinical supervision and interpersonal relationship is associated with clinical performance of nurses. Motivating and ensuring effective supervision of nurses will go a long way to improve the performance of nurses.

Keywords: Clinical performance, Attitude, Nursing, Registered nurses, Ghana

INTRODUCTION

Background

Nurses form the core of every healthcare institution and are the largest group of health care providers (Koushali, Hajiamini, and Ebadi, 2012). The clinical performance of nurses therefore largely affects the quality, efficiency, and equity of health services rendered in any healthcare institution (Nebiat, 2010).

Hence, the factors that influence nurses' performance cannot be overlooked. Nurses spend most of their work time with patients. Thus, improvement in nurses' performance leads to improvement in patient outcome (DeLucia, Ott, and Palmieri, 2009).Ensuring that nurses clinically perform efficiently, effectively, safely and timely is however one of the greatest challenges encountered by most healthcare institutions.

Studies have shown that factors such as attitude, work environment, and personal factors like age, educational attainment, and work experience do influence one's work performance. Cooper, Holdsworth, and Johnson (2012) have stressed on attitude towards work and Velnampy(2007) and Subramani (2011) stated that employees' attitude and workplace environment impacts nurses' level of performance. Asigele (2012) have also shown that work environment elements have an effect on the performance of health providers.

Work environment is not only the physical facilities but this also includes the quality of clinical supervision personnel receive, learning opportunities available, and the relationship they have with their colleagues, immediate supervisor as well as other members of the health team. A good clinical environment promotes holistic care, inquiry, critical thinking, accountability, autonomy, and professional behavior(Khouri, 2011).A practice environment that is full of trust, respect and collaboration enables health workers to flourish(Pullen, 2011). As suggested by Purby and Laschinger (2011),empowering workplaces positively impacts individual empowered behavior, job satisfaction, and quality of care. The quality of workplace environment which include factors such as the supervisor support as well as availability of tools and equipment to work with, managerial fairness, support for staff welfare influences health workers' performance level and patient safety(Asigele, 2012; Naharuddin and Sadegi, 2013).During supervision, supervisors play the interpersonal role of encouraging positive relations which boosts employees' self-confidence which then goes a long way to improve their performance(Asigele, 2012).Learning opportunities such as attending in-service programs, training sessions, nursing conference, and symposium also improves the knowledge and skills needed for promoting nursing performance (Khair, Al-Zubaidi, Al-Gersha, and Al-Gailani, 2007).

Currently, there is a growing concern that healthcare systems are not producing the expected health intervention output(Awases, Bezuidenhout, and Roos, 2013). The World Health Organization (WHO) recognizes the health workforce performance challenges especially in Africa as an international concern(World Health Organization, 2007). In Africa, many countries are facing the challenge of improving performance of health workers so as to ensure that efficient health interventions are delivered(Nebiat, 2010). There is a concern about poor quality health services rendered in countries such as Ethiopia and Namibia even though there has been advocates for improved performance(Awases et al., 2013; Nebiat, 2010). This is not different from Ghana because the standards of nursing practice in the country has become an issue of concern to all including stakeholders and the nurses themselves(Mahama, 2012). According to Alhassan, et al (2013), there is a generally inadequate quality of care in health facilities in Ghana.

There is however paucity of evidence on the influence of attitudes and working environment on the perception of clinical performance of nurses in Ghana. Since nurses provide direct care to patients, it is imperative to generate evidence on the factors that determine their performance so as to ensure that they provide quality care to patients. The purpose of this study was to determine the relationship between attitude, clinical environment and registered nurses' clinical performance in the Ashanti Region of Ghana.

Theoretical Framework

This study was guided by the Self-Efficacy Theory by Alberta Bandura(Bandura, 1994). Bandura believed that self-efficacy is central to the social cognitive theory. Self-efficacy is people's beliefs about their capabilities to produce given attainments or designated levels of performance that affect their lives. These beliefs determine how people feel, think, motivate, and behave themselves through four major processes: cognitive, motivational, affective, and selection processes. Personal well-being and accomplishments are heightened by a strong sense of efficacy. Difficult tasks are approached as challenges to be mastered by people who have high assurance in their capabilities as they set challenging goals for themselves and maintain strong commitment to them. People who have a high sense of personal efficacy have the power to persevere and endure all obstacles and setbacks that they encounter so as to succeed.

According to Bandura (Bandura, 1994), there are four sources of efficacy; strengthening people's beliefs that they have what it takes to succeed. Namely: mastery of experiences, vicarious experience, social persuasion, and physiological and emotional states. Past experiences, which are successes in life, enable one to build robust belief in personal efficacy, but failures undermine it. This implies that successful people tend to feel more efficacious than unsuccessful people. Vicarious experiences are provided by social models. Observing an individual succeed or perform competently through sustained efforts increases one's assurance in

his/her capabilities to master similar activities and succeed. Modeling influences and provides a standard against which an individual judges his/her own capabilities. Knowledge is transmitted as the observer is taught effective skills and strategies for managing environmental demands through the model's behavior and expressed ways of thinking.

Social persuasion exists when people are persuaded or motivated of their capabilities to master certain activities. They are likely to mobilize much effort and sustain it. It encourages people to work hard in order to succeed. People with high sense of efficacy are likely to view their state of affective arousal as a facilitator of performance.

In this study, past experiences would help form or develop nurses' attitudes; possessing positive or negative attitude. Also, the clinical supervision, learning opportunity and interpersonal relationship which are factors within the clinical environment can be developed through mastery of past experiences, vicarious experiences, verbal persuasion as well as physiological and emotional states. Hence these sources of self-efficacy when present in the work environment, help the nurses believe in their ability to perform specific tasks. For instance, the nurses' perceptions of their own performances as well as that of others have influence on their environment as well as their self-beliefs which in turn alters their performance.

Factors such as interpersonal relationships control over environment, shift, emotional factors, job assignment, overtime duty, and extended work impacts employee's attitude at the workplace (Chandrasekar, 2011). From the theory of self-efficacy, it could be said that when registered nurses are provided with opportunities to enhance their self-efficacy such as role modeling through clinical supervision and verbal persuasion, their practice behavior may improve, hence their improved clinical performance in terms of care provision and management, professional, personal and quality development and professional, ethical and legal practice. These concepts have been put together in a framework as shown in Figure 1.

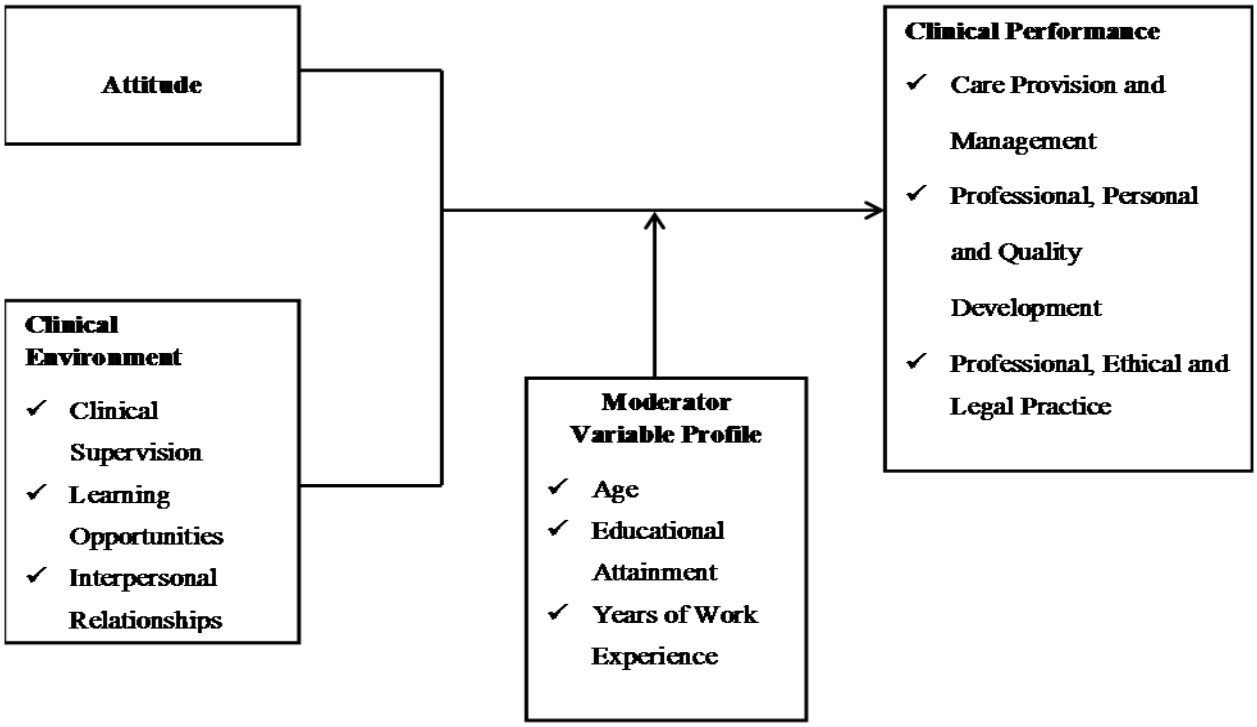

Figure 1: Research paradigm of the study

Definition of Terms

Attitude refers to nurses' feelings, thoughts, and behaviors towards nursing profession.

Care provision and management refers to nurses' ability to facilitate a coordinated approach to care planning, implementation, and evaluation and utilization of resources appropriately.

Clinical environment refers to characteristics of the nurse's work environment in terms of clinical supervision, learning opportunity, and interpersonal relationship.

Clinical performance refers to the way a nurse executes assignments or tasks in terms of care provision and management, professional, personal and quality development and professional, ethical, and legal practice.

Clinical supervision refers to nurses' given aid, support, motivation, guidance or direction on performance of their clinical duties/tasks.

Interpersonal relationship refers to close association between the nurses, their supervisor and colleague nurses where there is a mutual understanding and respect.

Learning opportunity refers to situations where nurses are allowed to improve on their clinical knowledge and skills in terms of nursing seminars/conferences and in-service training programs as well as availability of equipment and supplies.

Professional, ethical and legal practice refers to nurse's ability to provide accountability for services, work within scope of practice and render evidence based care.

Professional, personal, and quality development refers to nurses' ability to advance and develop one's self and others professionally for the provision of quality care.

METHODS

Study design and population

This study utilized a descriptive correlation design(Polit and Beck, 2012).The study population comprised of regular registered nurses in public hospitals within the Ashanti Region of Ghana. Ashanti Region being one of the ten administrative regions of the country covers a land size of 24,389sq km, which is about 10.2% of the land area of Ghana. In terms of population, it is the most heavily populated region in Ghana, with a population of 4,780,380, 19.4% of the country's total population(Ghana Statistical Service, 2012).The Ashanti Region has 530 health facilities. 170 of these health facilities are operated by the Ghana Health Service;71 by missions; 281 by private institutions; and 8 by the Ashanti quasi-government.

Sampling and sample size

A simple random sampling technique was employed to select public health facilities for this study. These were Bekwai Government Hospital in the Bekwai municipality, Effiduasi District Hospital in the Sekyere East district and South Suntreso Hospital, Manhyia District Hospital, and Komfo Anokye Teaching Hospital in the Kumasi metropolis. Nurses at the various facilities were also randomly selected. The inclusion criteria for the nurses were currently working in the hospital for six months and beyond and consenting to participate in the study. Two hundred respondents who met the set criteria were involved the study, amounting to 80% of the questionnaires distributed.

Instrumentation

Data was gathered with the use of a structured questionnaire. The questionnaire was divided into four parts. The first part was composed of the respondents' demographic profile. This included age, gender, marital status, educational attainment, and working experience. The second part measured nurses' attitude towards nursing profession. This part contained eight items to evaluate registered nurses' attitude towards nursing and it was developed with recourse to the Attitude Scale for Nursing Profession (ASNP) (Ipek Coban and Kasikci, 2011).

The third part was developed based on the Clinical Learning Environment and Supervision instrument (CLES) (Saarikoski and Leino-Kilpi, 2002) and it measured the clinical environment of the registered nurses in terms of clinical supervision, learning opportunities and interpersonal relationships. This section consisted of 27 items. The items 1-10 measured clinical supervision, items 11-20 measured learning opportunities and items 11-27 measured interpersonal relationship.

The final part of the questionnaire measured the clinical performance of the registered nurses.

To measure the clinical performance of registered nurses, the International Council of Nurses (ICN) competency framework was adapted (ICN, 2008). The framework groups competencies under three headings; (i) Care provision and management (key principles of care and leadership and management), (ii) Professional, personal and quality development (enhancement of the profession, quality improvement, and continuing education) and (iii) Professional, ethical and legal practice (accountability, legal practice, and ethical practice). However, some of the items were modified to adapt to the local practice in Ghana. Items 1-15 measured care provision and management, items 16-28 measured professional, personal, and quality development and items 29-38 measured professional, ethical, and legal practice. The Likert scale was employed in answering all the items in part two to four.

Table 1: Attitude towards nursing profession

No.	Item	M	SD	SR
1	Nursing tasks are enjoyable to perform.	3.33	0.61	Agree
2	Nursing is a noble profession.	3.79	0.48	Strongly agree
3	I am delighted in caring for			
	a. individuals	3.54	0.63	Strongly agree
	b. family	3.25	0.72	Agree
	c. community	3.29	0.77	Agree
4	Nursing makes one to become a responsible person.	3.15	0.99	Agree
5	If there is an opportunity I would change my profession.	1.90	0.95	Disagree
6	Nursing will enable me to become financially stable.	2.38	0.93	Disagree

M=mean; SD=Standard deviation; SR=Scale response; Response scale: Highly Positive = 3.50-4.00; Positive = 2.50-3.49; Negative = 1.50-2.49; Highly Negative =1.00-1.49

The instruments for the study were validated by experts from Adventist University of Philippines and nurses from hospitals and schools in Ghana of which six were nurses. The instruments were revised based on the experts' suggestions. After validation, a pilot study was conducted in one hospital within the Ashanti Region of Ghana to ensure the reliability of the instruments. Questionnaires were self-administered and research assistants offered help to the respondents only when deemed appropriate. The validity and reliability of the instruments was tested using the Cronbach's Alpha(Cronbach, 1951).Cronbach's alpha for the 10 attitude items was 0.68 whereas that of the 15, 13 and 10 items on different aspect of clinical performance were 0.89, 0.87 and 0.86 respectively. Details of results of the reliability test is presented as Supplementary Table 1.

Data analysis

The gathered data were encoded using the Microsoft Excel and analyzed using the Statistical Package for the Social Science (SPSS) version 22. Frequency distribution and percentages was used to describe the demographic profile of the respondents. The extent of attitude, clinical environment and clinical performance of the respondents was determined using mean and standard deviation. Factors for attitude, clinical environment and clinical performance were identified by means of principal component analysis (PCA). This procedure identifies latent factors that explain the maximum of the total variance of the various items. The factors were orthogonally rotated (varimax rotation) to facilitate the interpretability of the factors and to ensure that the factors remain uncorrelated. The decision on the number of factors that should be retained was based on the inspection of the scree plot, an eigen value >1, and the plausibility of the factors. Rotated factors with |factor loading| ≥ 0.40 were considered to contribute to the pattern. A score of each of the identified factors was assigned to every participant to rank the participants according to the adherence factors. Bivariate association between background characteristics, factors of attitude, clinical environment and clinical performance were assessed using Pearson correlation. Multiple regression, using backward selection was used to determine the predictors of registered nurses' clinical performance considering.

Ethical Considerations

Letters requesting to conduct the study were provided to the leadership of the hospitals prior to data collection. Participants had adequate information regarding the study and they had the choice to consent to or decline participation. The leadership of the hospitals and the respondents were informed that the information gathered from them would be treated with utmost confidentiality. The identity of the hospitals and respondents were not linked with the data or information provided and was not publicly divulged. The study was ethically approved by the Institutional Review Board of the Kwame Nkrumah University of Science and Technology - Committee for Human Research Publications and Ethics and informed consents was sought from all participants.

RESULTS

Background characteristics of respondents

Majority, 54% were in the age group of 25-29years and 72.4% were females, Supplementary Table 2. Most of them were married whiles 41.2% were single. About 44% held diploma whereas 18.1% held bachelor. Most of them had worked at the facility for less than 3 years with less than 10% working for more than 10years.

Table 2: Perception of the learning environment

N.	Item	M	SD	SR
Clinical Environment in Terms of Clinical Supervision				
My supervisor:				
1	Gives honest evaluation.	3.90	0.92	Frequently
2	Helps me overcome my weaknesses.	3.72	1.03	Frequently
3	Praises me for a job well done.	3.69	0.99	Frequently
4	Models new or difficult clinical skills for me.	3.23	1.03	Sometimes
5	Treats me with respect	3.98	0.97	Frequently
6	Gives me practical tips on how to succeed as a professional nurse.	3.57	1.06	Frequently
Clinical Environment in Terms of Learning Opportunity				
1	The hospital provides seminar and conference attendance	1.97	1,09	Rarely
2	I The hospital has a programme for clinical specialty training in other hospitals	3.62	0.99	Frequently
3	The hospital provides academic upgrading.	3.69	0.99	Frequently
4	In-service training programs cater for the needs of staff.	3.13	1.04	Sometimes
5	In-service programs are planned by the nurse manager and staff.	3.15	1.21	Sometimes
6	In-service training programs are compulsory for all staff.	3.07	1.33	Sometimes
7	I am given the opportunity to attend national nursing seminars yearly.	2.27	1.24	Sometimes
8	The hospital sponsors staff to attend training programs.	2.68	1.15	Sometimes
Clinical Environment in Terms of Interpersonal Relationship				
1	People in this unit trust each other.	3.47	0.97	Sometimes
2	The nurse managers are approachable.	4.01	1.00	Frequently
3	I feel respected by the people I work with.	4.08	0.90	Frequently
4	My colleagues allow me to perform nursing tasks independently.	3.84	0.99	Frequently
5	I receive support from the staff in the workplace.	3.73	0.95	Frequently
6	I receive encouragement from the staff in the workplace.	3.73	0.85	Frequently

M=mean; SD=Standard deviation; SR=Scale response.
Response scale: very good = 4.50-5.00; Good = 3.50-4.49; Average = 2.50-3.49, Poor = 1.50-2.49; Very Poor = 1.00-1.49

Nurses' attitude towards nursing profession

The mean ±SD of the responses are presented in Table 1. The highest mean, 3.79 ± 0.48 was for item number 2, "Nursing is a noble profession", implying that most nurses perceive the profession as an honorable one. Majority also disagreed that nursing will make them financially positive, indicating a negative attitude. Two factors were identified on nurses' attitude towards the profession as shown in Supplementary Table 3. Factor 1, 'positive attitudes' was characterized by delight for caring for family, community and individuals, finding nursing as a noble profession and believe that nursing will make one financially stable. The second factor, named 'negative attitudes' was also associated with high factor loading of nurses' willingness to change profession if given the opportunity, nurses provide bedside care only, nursing make one responsible and nurses tasks not enjoyable to perform.

Extent of clinical environment

As shown in Supplementary Table 4, three factors were identified on perception of the clinical environment. Factor 1, 'clinical supervision', was characterized by believe of the supervisor as; models new or difficult clinical skills, treats with respect, helps to overcome weaknesses, praises for job well done, gives honest evaluation and gives practical tips on how to succeed as a professional nurse. The results further revealed that nurses had average to good clinical supervision. The item with the highest mean was "treats me with respect", 3.98 ± 0.97 whereas the lowest mean was "models new or difficult clinical skills for me", 3.23 ±1.03, Table 2.

The second factor, 'learning opportunity' was associated with high factor loadings for perceptions that are related to opportunities for training for the nurses. This included hospital's provision of seminar attendance, academic upgrading, has a programme for clinical specialty training in other hospitals and provision of in-service training programmes. The most favorable response was item number 3, "the hospital provides opportunities for academic upgrading," mean =3.69 ±0.99 whiles the lowest ranked item was item number 9, "The hospital allows me to attend international conferences" with a mean of 1.97 ±1.09.

The third factor, interpersonal 'relationship' was characterized by items such as receipt of support from staff in the workplace, feeling respected by people they work for, receiving encouragement from staff in the

Table 3: Level of clinical performance of registered nurses

No.	Item	Supervisors			Nurses		
		M	SD	VI	M	SD	VI
Care provision and management							
1	Formulating comprehensive care plan based on health assessment done.	3.61	0.95	Good	3.72	0.62	Good
2	Evaluating client care.	3.71	0.78	Good	3.79	0.59	Good
3	Revising care plan in collaboration with other members of the healthcare team.	3.54	0.93	Good	3.65	0.64	Good
4	Accurately monitoring client progress toward expected outcomes.	3.86	0.85	Good	3.95	0.65	Good
5	Responding appropriately to emergency situations.	4.12	0.65	Good	4.18	0.53	Good
6	Accurately documenting findings and client responses.	4.04	0.82	Good	4.13	0.58	Good
7	Sharing accurate information verbally, or in written forms.	3.92	0.83	Good	4.05	0.54	Good
8	Referring clients where appropriate to ensure they have access to best available interventions.	3.52	1.05	Good	3.81	0.70	Good
9	Involving client in care planning	3.49	0.92	Average	3.73	0.65	Good
10	Advocating for clients who cannot represent or speak for themselves.	3.80	0.79	Good	3.88	0.62	Good
11	a. administering prescribed dosage.	4.31	0.70	Good	4.32	0.51	Good
12	b. recording medication.	4.21	0.77	Good	4.22	0.55	Good
13	c. assessing side-effects of prescribed medication.	4.02	0.81	Good	4.11	0.58	Good
Professional, Personal, and Quality Development							
1	Promoting a positive image of nursing.	4.05	0.85	Good	4.10	0.55	Good
2	Participating in quality improvement procedures.	3.59	0.95	Good	3.80	0.62	Good
3	Undertaking regular evaluation of own practice.	3.38	0.93	Average	3.64	0.57	Good
4	Assuming responsibility for lifelong learning to improve competence.	3.78	0.80	Good	3.89	0.55	Good
5	Participating in professional activities.	3.80	0.80	Good	3.96	0.54	Good
Professional, ethical and legal practice							
1	Recognizing and respecting the different levels of accountability.	4.08	0.71	Good	4.16	0.53	Good
2	Recognizing own competence.	3.87	0.70	Good	4.02	0.48	Good
3	Recognizing the limits of scope of practice.	3.90	0.74	Good	3.98	0.53	Good
4	Practicing in conformity to the scope of nursing practice.	4.00	0.69	Good	4.02	0.51	Good
5	Advocating and protecting human right.	4.20	0.74	Good	4.28	0.53	Good
6	Questioning violations of client according to the nurses' code of ethics.	3.72	0.92	Good	3.88	0.64	Good
7	Maintaining confidentiality and security of written, verbal and electronic information acquired in a professional capacity.	4.34	0.77	Good	4.37	0.54	Good
8	Challenging health care practices that could compromise client safety.	3.95	0.76	Good	4.00	0.56	Good

M=mean; SD=Standard deviation; SR=Scale response; Response scale: very good = 4.50-5.00; Good = 3.50-4.49; Average = 2.50-3.49, Poor = 1.50-2.49; Very Poor = 1.00-1.4

Table 4: Results of bivariate correlations between clinical performance and predictors

Variables	Professional, ethical, legal practice and quality development		Clinical provision and management of clients		Clinical provision, planning and evaluation	
	Pearson's r	p-value	Pearson's r	p-value	Pearson's r	p-value
Age	0.076	0.227	-0.025	0.689	-0.027	0.668
Education						
– Diploma	-0.002	0.980	0.105	0.095	0.007	0.908
– Certificate level	0.093	0.140	-0.097	0.125	-0.087	0.166
Work experience						
– 4-6years	0.126	0.045	0.028	0.655	0.088	0.163
– >6years	0.065	0.302	0.021	0.741	0.084	0.180
Positive attitudes	0.115	0.068	0.112	0.074	0.062	0.327
Negative attitudes	-0.173	0.006	-0.017	0.782	-0.031	0.622
Clinical supervision	0.219	<0.001	0.146	0.020	0.269	<0.001
Learning opportunity	-0.126	0.045	-0.062	0.325	-0.289	<0.001
Interpersonal relationship	0.306	<0.001	0.378	<0.001	0.312	<0.001

r=correlation coefficient

Table 5: Predictors of clinical performance

Variables entered	ß	95% CI	Standard Error	p-value
Professional, ethical, legal practice and quality development; R^2=0.139				
(Constant**)**	-0.005	-0.121, 0.112	0.059	0.939
Negative attitudes	-0.169	-0.284, -0.052	0.059	0.005
Clinical supervision	0.124	0.002, 0.245	0.062	0.046
Interpersonal Relationship	0.266	0.145, 0.387	0.062	<0.001
***Clinical provision and management of clients;* R^2= 0.154**				
(Constant**)**	0.102	-0.053, 0.257	0.079	0.197
Bachelor education	-0.208	-0.439, 0.023	0.117	0.077
Clinical supervision	0.377	0.263, 0.492	0.058	<0.001
***Clinical provision, planning and evaluation;* R^2= 0.168**				
(Constant**)**	-0.002	-0.116, 0.112	0.058	0.968
Clinical supervision	0.146	0.024, 0.267	0.062	0.019
Learning opportunity	-0.206	-0.325, -0.008	0.060	0.001
Interpersonal relationship	0.225	0.105, 0.345	0.061	<0.001

ß=regression coefficients; Adjusted for health facility

workplace perception that nursing managers are approachable. The highest mean score for interpersonal relationship was item number 3, "I am able to socialize with other people in the work environment," mean; 4.17 ± 0.85. On the other hand, the lowest mean was item 1, "People in this unit trust each other," mean; 3.47 ±0.97.

Level of clinical performance of registered nurses

Three factors were identified for clinical performance, Supplementary Table 5. Factor 1 was named 'professional, ethical, legal practice and quality development' and was characterized by factors related to both professional, personal and quality development and professional, ethical and legal practice. Items associated with this factor included assuming responsibility for lifelong learning to improve competence (mean; 3.89 ±0.55), practicing in conformity of nursing practice (mean; 4.02 ±0.51), maintaining confidentiality and security of written (mean; 4.37 ±0.54), recognizing and respecting the different levels of accountability and participating in quality improvement procedures (mean; 4.16 ±0.53), Table 3.

The second factor, 'clinical provision and management of clients' was associated with high factor loading for items that mainly relate to care, provision and management, including recording medication, assessing side effects of prescribed medications, administering prescribed dose, involving client in care planning, sharing accurate information verbally or in written forms and advocating for clients who cannot represent or speak for themselves.

The third factor was named 'clinical provision, planning and evaluation' was also characterized by high factor loadings of items in the care provision and management item of the clinical performance questionnaire, but more related to care and evaluation and planning, This included evaluation of client care, formulating of comprehensive care plan on health assessment, accurately monitoring client progress toward expected outcome and following evidence based practice guidelines in nursing care delivery.

Predictors of clinical performance

As shown in Table 4, there was a positive correlation between clinical supervision and allaspects of clinical performance; professional, ethical, legal and quality development (r=0.219; p<0.001), clinical provision and management of clients (r=0.146; p=0.020) and clinical provision, planning and evaluation (r=0.269; p<0.001). Learning opportunity was negatively associated with professional, ethical, legal and quality development (r=-0.126; p<0.045) and clinical provision,

planning and evaluation (r=-0.289; p<0.001). Negative attitudes was also negatively associated with professional, ethical, legal and quality development whereas interpersonal relationship relates positively with all aspects of clinical management.

Table 5 shows the predictors of nurses perceptions of clinical performance. Professional, ethical, legal practice and quality development was predicted by negative attitudes, clinical supervision and interpersonal relationship. Per 1 score standard deviation (SD) of negative

attitudes, the score of professional, ethical, legal practice and quality development decreased by 0.169. The score of this clinical performance measure however increased by 0.266 per 1 score SD of interpersonal relationship.

Clinical provision and management of clients was predicted by perception of clinical supervision. Per 1 score SD of clinical supervision, the score of clinical supervision and management of clients increased by 0.337.Finally, clinical provision, planning and evaluation was positively predicted by clinical supervision and interpersonal relationship and positively predicted by learning opportunity.

DISCUSSION

The main finding of this study was that, clinical performance in terms of professional, ethical, legal practice and quality development was predicted by negative attitudes, clinical supervision and interpersonal relationship. Clinical provision and management of clients was predicted by perception of clinical supervision and clinical provision, planning and evaluation was positively predicted by clinical supervision and interpersonal relationship and positively predicted by learning opportunity. Age, education and period of work experience did not have significant association with perception of clinical performance.

Negative nursing attitude was associated with perception of clinical performance. This study identified two factors relating to nurses' attitudes, 'positive' and 'negative'. Positive attitudes identified included their view of nursing as a noble profession and their delight to care for individuals and the community. This supports findings of Koushali et al (2012) in Iran and Matheka et al (2011)in Kenya, where nurses had positive attitude toward their profession and reflects their more stable attitude towards this occupation. As stated by Koushali et al (2012), nurses' involvement with their duties and responsibilities and the sense of usefulness depict their positive attitude toward their profession which in turn enhances the quality of patients' care.

Negative attitudes such as nurses task not being enjoyable and changing profession when giving the opportunity were recorded. ***c***onsistently, in the study by Poreddi et al (2012), some the nurses wanted to change the profession. Negative attitudes negatively predicated professional, ethical, legal practice and quality development. This corroborates the study by Riketta(2008), where attitude has a significant effect on performance. Employees' attitude is essential for the achievement of both individual and organizational objectives through their performance (Velnampy, 2007). Clinical performance will go down if employees develop negative attitudes. There cannot be patient and family satisfaction without a positive attitude towards the nursing profession by the nurses and the quality of work depends on one's attitude (Coban and Yurdagul, 2014).

The quality of workplace environment influences patient safety outcomes (Spence Laschinger and Leiter, 2006) as well as health workers' performance level (Asigele, 2012; Naharuddin and Sadegi, 2013). Improving work environments holds promise of stabilizing the global nurse workforce and better quality of care (Megal, 2013). This study identified three factors that explains nurses' perceptions of the clinical environment. These were clinical supervision, which explained 25.3% of the total variance, learning opportunity which also explained 10.4% of the total variance and interpersonal relationship, explaining 7.3%.

Clinical supervision ensures opportunity for Continuous Professional Development (CPD) and it is considered to be beneficial to both nurses and patients (Bush, 2005). The various items identified indicate that nurses had average to good clinical supervision. The nurses gained respect from their supervisors, were mostly inspired to develop professionally during clinical supervision and were honestly evaluated. As stated by Ellis and Hartley (2008), respect has to be central to all interactions within the healthcare environment. Rapport building, empathy and respect have been proven to be qualities valuable in nursing supervision(Stapleton et al., 2007).

Clinical supervision had positive association with all factors of clinical performance. Thus, nurses who experience regular clinical supervision are able to develop personally, professionally, ethically and qualitatively. This is consistent with Brunero and Stein-Parbury (2007), who reported clinical supervision as a means of promoting professional accountability, skill and knowledge development, and that skill and knowledge development can be provided through clinical supervision. According to WHO (WHO, 2013), fair supervision is an appropriate instrument to improve the competence of individual health workers. Practical skills acquired through on-the-job training can easily be integrated through supervision and a firm but fair supervision is an appropriate instrument to improve the competence of individual health workers (WHO, 2013). Khair et al (2007) recommended that nursing supervision should be used to ensure periodic evaluation of nursing

performance. When supervision is well executed, it can be a mechanism for encouraging professional development (Awases et al., 2013; Nebiat, 2010).

Learning opportunity was characterized by high factor loadings for perceptions that are related to opportunities for training for the nurses, including provision of seminar attendance, academic upgrading and provision of in-service training programmes. Nurses are not only responsible for the care of patients but also for their own personal and professional development (Coban and Yurdagul, 2014). An environment in which nurses are kept up to date with modern developments by means of in-service training and continuing professional education (CPE), ensures high quality nursing care and improved clinical outcome (Bluestone et al., 2013; Norushe, Van Rooyen, and Strumpher, 2004). Finkler and McHugh (2008) revealed that nurses view educational support as one of the top 10 items important to them. When workers are provided with job-content training, they are able to develop basic skills that might not have been acquired during previous training in the execution of their current duties (Ursula Ramathuba and Davhana-Maselesele, 2013). Learning opportunity was sub optimal in this study and the nurses revealed that they rarely attend international conferences. This probably could be due to lack of funds to sponsor staffs for training programs, especially international training programs. Learning opportunity for nurses was inversely associated with clinical provision, planning and evaluation. Inadequate learning opportunity and training of nurses therefore could lead to sub optimal clinical performance.

Socialization within the work environment makes it easier for the nurses to approach their supervisors. Interpersonal relationship was characterized by perceptions such as respect, trust and encouragement among the nurses. This finding corroborates previous evidence(Lephalala, Ehlers, and Oosthuizen, 2008). Relationships within the healthcare should be based on respect toward patients and towards coworkers(Ellis and Hartley, 2008). Trust in the integrity and purpose of all individuals in the healthcare team creates the foundation for successful interaction, problem solving and team building(McCabe and Sambrook, 2014).

Interpersonal relationship positively predicted care provision, planning and evaluation; hence the more positive the interpersonal relationship among the nurses and between the nurses and their supervisors, the better the clinical performance. Healthy work environment and relations have been said to motivate employees to do good which consequently increase the level of their performance (Saeed et al., 2013). Nurses who provided and managed good care were those who had strong interpersonal relations between them and their co-workers, other health professional and patients.

Strength and Limitations

This study provides important quantitative evidence that enriches previous evidence on nurses' clinical performance and provides deeper understanding of the determinants of nurses' clinical performance which would help to improve the quality of care rendered by the healthcare sector. This will contribute to Nursing education, research and practice by serving as a knowledge base for improving nurses' clinical performance and helping nurses to adopt appropriate measures that will contribute towards improving clinical performance as they become aware of the factors predicting performance. This study however had some limitations. First, the study depended on self-report surveys to measure nurses' clinical performance. The honesty of the respondents in answering questions was however a limitation encountered since some might have just given good account of themselves as well as their supervisors so as to impress the supervisors. This was minimized by asking the respondents to be honest in answering the questionnaires and the nursing supervisors counterchecking the nurses' performance. Second, the hospitals from which the data were gathered had different clinical environments, and could have introduced errors in our effect estimates. This was however taken into account in the multivariable regression analysis. Finally, this was a cross-sectional study and therefore could not make causal inferences on the relationship studied.

CONCLUSION

Findings from this study shows positive and negative attitudes among nurses and a clinical working environment characterized by supervision, interpersonal relationship and less learning opportunities. Clinical performance was identified by professional, ethical, legal and quality development; clinical provision and client managing; and clinical provision, planning and evaluation. The study further showed that the negative attitudes of nurses, clinical supervision, learning opportunity and interpersonal relationship could predict perception of clinical performance of nurses. Negative attitudes negatively predicted nurses' perceptions of clinical performance. Motivating and ensuring effective supervision of nurses will go a long way to improve on the performance of nurses.

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AUTHOR CONTRIBUTIONS

Ruth Benson conceived and designed the study and collected the data, wrote the first draft of the manuscript. Richard O Amaniampong and Isaac Amankwaa wrote the first draft of the manuscript. All authors reviewed and critically revised the manuscript for important intellectual content and agreed to submit the manuscript for publication.

DECLARATION OF INTEREST

The author(s) declare(s) that there is no conflict of interest regarding the publication of this manuscript.

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Supplemental Table 1: Results of reliability test

Variables	Number of Items	Reliability Test Result(Alpha)
Attitude	10	0.679
Clinical Environment		
ClinicalSupervision	10	0.771
Learning Opportunity	10	0.866
InterpersonalRelationship	7	0.689
Clinical Performance		
Care Provisionand Management	15	0.890
Professional, Personal and Quality Development	13	0.870
Professional, Ethical and Legal Practice	10	0.857

Supplementary Table 2: Background characteristics of respondents

Variables	Frequency N=200	Percentage
Age (n=198)		
– 20-24	48	24.2
– 25-29	107	54.0
– 30-39	43	21.8
Gender (n=199)		
– Male	55	27.6
– Female	144	72.4
Marital status (=199)		
– Single	117	58.8
– Married	82	41.2
Educational level (n=199)		
– Certificate	76	38.2
– Diploma	87	43.7
– Bachelor	36	18.1
Length of work experience (n=199)		
– <=3years	134	67.3
– 4-6years	34	17.1
– 7-9years	13	6.5
– 10-12years	18	9.1

Supplementary Table 3: Factors of attitude towards the nursing profession derived by principal component analysis and rotated factor loadings

	Factor loading	
	Positive attitudes	**Negative attitudes**
Delighted in caring for family	0.772	
Delighted in caring for community	0.704	
Delighted in caring for individuals	0.629	
Nursing is a noble profession	0.429	
Nursing will enable me become financially stable	0.425	
Change profession if there is opportunity		0.610
Nurses provide bedside care only		0.603
Nursing makes one responsible		0.583
Nurses tasks not enjoyable to perform		0.558
Eigen values	2.07	1.90
% variance explained	17.296	15.714
% variance accumulated	17.296	33.010

Supplementary Table 4: Factors of perception of the clinical environment derived by principal component analysis and rotated factor loadings

	Factor Loading		
	Clinical supervision	**Learning opportunity**	**Interpersonal relationship**
My supervisor models new or difficult clinical skills for me	0.833		
My supervisor treats me with respect	0.723		
My supervisor helps me overcome my weaknesses	0.678		
My supervisor praises me for a job well done	0.677		
My supervisor gives honest evaluation	0.616		
My supervisor gives me practical tips on how to succeed as a professional nurse	0.614		
The hospital provides seminar and conference attendance		-0.717	
The hospital provides academic upgrading		-0.693	
The hospital has a programme for clinical specialty training in other hospitals		-0.693	
In-service programs are planned by the nurse manager and staff		-0.692	
Given the opportunity to attend national nursing seminars yearly		-0.667	
In-service training programs are compulsory for all staff		-0.650	
The hospital sponsors staff to attend training programs		-0.569	
In-service training programs cater for the needs of staff		-0.566	
I receive support from the staff in the workplace			0.802
My colleagues allow me to perform nursing tasks independently			0.739
I feel respected by the people I work with			0.629
I receive encouragement from the staff in the workplace			0.627
People in this unit trust each other			0.590
Nursing managers are approachable			0.556
Eigen values	5.350	5.744	4.221
% variance explained	25.348	10.411	7.260
% variance accumulated	25.348	35.759	43.019

Supplementary Table 5: Factors of perception of the clinical performance derived by principal component analysis and rotated factor loadings

	Factor Loading		
	Professional, ethical, legal practice and quality development	**Clinical provision and management of clients**	**Clinical provision, planning and evaluation**
Assuming responsibility for lifelong learning to improve competence	0.749		
Practicing in conformity to the scope of nursing practice	0.744		
Recognizing own competence	0.701		
Undertaking regular evaluation of own practice	0.679		
Maintaining confidentiality and security of written, verbal and electronic information acquired in a professional capacity	0.651		
Recognizing the limits of scope of practice	0.647		
Participating in professional activities	0.640		
Questioning violations of client according to the nurses code of ethics	0.634		
Recognizing and respecting the different levels of accountability	0.628		
Advocating and protecting human right	0.616		
Participating in quality improvement procedures	0.564		
Challenging health care practices that could compromise client safety	0.554		
Recording medication		0.823	
Assessing side-effects of prescribed medication		0.795	
Administering prescribed dosage		0.790	
Responding appropriately to emergency situations		0.697	
Referring clients where appropriate to ensure they have access to best available interventions		0.610	
Involving client in care planning		0.589	
Promoting a positive image of nursing		0.556	
Sharing accurate information verbally, or in written forms		0.523	
Advocating for clients who cannot represent or speak for themselves		0.521	
Accurately documenting findings and client responses		0.507	
Evaluating client care			0.651
Formulating comprehensive care plan based on health assessment			0.548
Revising care plan in collaboration with other members of the healthcare team			0.535
Accurately monitoring client progress toward expected outcome			0.462
			0.406
Eigen values	11.050	10.157	4.353
% variance explained	34.247	6.516	4.839
% variance accumulated	34.247	40.763	45.602