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Perception of Nursing Students' and Clinical Instructors on the Clinical Environment Factors Influencing Clinical Learning in Kenya

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ABSTRACT

Suitable clinical learning environment results in appropriate learning outcomes in clinical area. The objective was to analyze the influence of clinical environment on clinical learning. Cross sectional research design was used. Study targeted 200 participants sampled purposively. Data was recorded in SPSS version 21.0 and analyzed using t-test for means. Statistical significance was determined at p=0.01 the data was presented in form of tables. The study found that clinical placement (p=0.015), and length of clinical attachment (p=0.04) were predictors of clinical learning. The study recommends teaching facilities to establish appropriate schedule for clinical placements in order to enhance clinical learning.

Introduction

There is an increased need for radical change in nursing education. These challenges demand that nurse educator's designs clinical learning experience that will result in the graduates prepared to practice in changing health care environment (Benner et al., 2010). There is a significant gap between nursing practice and education preparation (Wolff et al., 2010). This gap is as a results of increased life expectancy and risen burden of complex and chronic diseases putting demand on the existing primary health care workforce therefore posing a significant challenge on providing a greater number of skilled health care nursing professionals to meet the demand (ICN, 2015). Studies by Saitsing et al., (2011) have indicated that student's skills in critical thinking and knowledge are not adequate enough to make them enter into the world of work. In particular, the study results indicated that novice nurses err in their nursing activities.

Clinical learning is the means by which student nurses learn to apply theory of nursing into practice in the clinical setting. The correlation of theory and practice and building of meaningful experience for student nurses takes place during clinical practice in health care setting (Sundler et al., 2013). Ijeoma et al., 2013, Schonwetter, 2007 &Talwar, 2005 found out that students' perception on effective clinical learning, requires professional knowledge and role modelling skills.

Veeramah (2012) did a study to compare the perception of two group of nurse trainees, those in wards with few students and those in wards with many trainees. The findings rated students in less populous clinical wards as more positive compared to those in more populous clinical settings. The study concluded that the preceptors in the clinical wards had more time to attend to individual trainees, making the quality of learning to be higher, and hence the difference between the two groups. Time constraints and lots of work remain the greatest hindrance to effective mentoring of nurse students by their experienced and registered counterparts. It also implies that nurses who couple as mentors of trainees do prioritize care of patients in clinical settings where workload pressure is caused by overcrowded placement of nurse trainees, as a result students were left alone particularly when pressure from work increased (Veeramah, 2012).

Clinical placement is used to refer to placement of nurse trainees in a clinical area. The area may include, but not limited to a hospital or a non-university location for the purposes of supporting one or more aspects of clinical learning (Mannix et al., 2006). Clinical placement is an important component of learning for programs in nursing because it gives the students the opportunity to interact and explore real life situations of the profession in distinct settings in the clinical area. The aim of clinical placement is to offer opportunities for authenticating their knowledge, integrating theory into practice, developing and refining skills. Lewin (2007) pointed that a clinical placement that is appropriate is composed of excited learners, resources of knowledge and clinical equipment. He asserts that even if a clinical setting is not much developed in terms of the afore-mentioned items, there ought to be change overtime. In a study to reviews that developmental changes in a clinical setting over a period of 25 years.

Lewin (2007) found that the learning environment has improved by twenty (20%). On the other hand, there was an 80% improvement when clinical placement is exercised at all environments. This indicated that the quality of learning in the clinical areas has improved overtime, informed by the rotation of student learning pertaining to their future careers (Henderson, et al., 2011). Labrague et al., (2015), observed that, the first clinical placement adds to the understanding of the clinical procedures, particularly when slotted in at the right time (Salminen, et al., 2010).

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Veeramah (2012) noted that clinical placements that are given short duration of time, limited the opportunity for trainees to learn because they are not fully exposed to a practical world of work, and therefore significantly reduce their opportunities to learn. Clinical placement not only plays an important role in the development of students' competency but also gives them confidence, organization of skills and preparedness for future practice.

It is important to note that availability of physical learning equipment plays a critical role in the healthcare clinical education of the nursing students. Physical learning equipment has an important role in clinical and health care education. Bisholt, et al., (2016), asserts that it is important that students get provided with efficient and effective clinical equipment for learning for they will use them to acquire knowledge and skills needed during practice. In addition, it aids the students to collaborate theories and knowledge obtained, not only in the class room but also in clinical setting as well, then apply them in an efficient manner in practical situations. This will be far-fetched when the equipment used for clinical learning are inappropriate or ineffective. Consequently, this lead to negative influence on the application of skills in clinical education and learning.

Resources and facilities are needed in regard to clinical learning, providing equipment for teaching and learning in the clinical sites. Review of research clearly demonstrated that students consider psychosocial aspect to be more influential on satisfaction and learning outcome (Anderson et al., 2011). On the other hand, some studies have shown that not all clinical settings create favorable learning environment due to lack of equipment. The Teaching Learning Resources (TLR) may be material resources, physical facilities or human resources. Inadequacy of materials used for learning, e.g. textbooks and equipment for practice at the clinical sites are the most cost-effective input affecting student performance (DFID, 2015).

Lyons (2012) intimates that learning is a complicated task that comprise interplay of the following; physical facilities, students' motivation, teaching resources and teaching and curriculum demands and skills. In this instance, the availability of learning and teaching resources advances school and hospital effectiveness since they comprise the basic resources that brings about better academic and clinical performance of the students. There are many resources available necessary for teaching and learning. They include human resource, material resources, e.g. teachers, physical facilities such as libraries, laboratories, and classrooms, and support staff. A number of studies have been done on the effect of learning materials on educational achievement. When teaching and learning resources are supplied both in quantity and quality, they play the role of improving accessibility, and consequent positive outcomes of performance in education. In such a scenario, students won't miss school since the TLR provides a relevant, meaningful and interesting learning.

Clinical learning consumes a great deal of teaching and learning time. This plays an important role on how students are directed towards acquiring competencies targeted by the training program. Watson et al., 2014 found out that limited length of clinical attachment for learning interfered with students' opportunities for learning. Lekalakala et al., 2015 found out that nurse trainee was not able to carry out practicals in clinical procedures for reasons of limited length of clinical time during attachment. Studies have shown that students expressed that they did not have enough time to learn, reflect and practice. This was attributed to limited length of time (Salminen et al., 2010).

A study on the perception of student nurse relationship with the clinical instructors found out that clinical instructors paid more attention to teaching behaviors that were more associated with learning practical skills (Parvan et al., 2018). There is limited literature on similar studies in Africa and with particular reference to Kenya. This study therefore sought to determine the perception of the nurse students and instructors of clinical teaching towards clinical experience.

Methods

The study was conducted at two selected public teaching and referral hospitals; Moi Teaching and Referral Hospital (MTRH) in Eldoret and County Referral Hospital (CGH) in Kakamega. The study focused on the clinical practical learning facilities that are used by nursing students. A cross-sectional research design was used. Purposive sampling was used to select the study participants. A total of 200 of participants took part in the study; 165 nursing students, 20 ward managers and 15 clinical instructors. Ethical clearance to conduct the study was approved by Masinde Muliro University of Science and Technology, Ethical Review Committee. Further, permit was also granted by National Council for Science & Technology (NACOSTI). A pre-test was conducted on twenty participants at County referral hospital in Kakamega to test the reliability and validity of the research instruments. The quantitative data was collected by use of self- administered structured questionnaire and recorded in SPSS version 21.0 and analyzed using proportions, t-test for the means and appropriate variability measures. The mean score of items within each domain were used to calculate the domain score. A non-parametric test (Mann–Whitney U-test) was used to determine differences between students' and clinical teachers' questionnaire responses. Although the aim of the study was not to compare the views of the clinical teachers and students, it was considered important to know where differences existed, as this could guide the development of clinical learning for teachers and students. Statistical significance was determined at $p < 0.01$ as the study focused on perceptions of participants.

To compare the means for students 'assessment and clinical instructors/managers assessment of clinical learning, Generalized Linear Models (GLM)was used since the two samples were independent and assumed to be normally distributed and of unequal size. The outcome variable was taken to be clinical competency which is an indicator for clinical learning.

Results and Discussion

Response rate

Two groups of respondents were interviewed as presented in Table 1. Out of the 165 questionnaires sent to students, response rate was 92.1% (152). Among clinical instructors and ward managers, 35 questionnaires were distributed with a return rate of 92. % (32).

Table 1. Response Rate.

Categories of respondents	Issued	Returned	Response rate
	N	N	%
Students	**165**	**152**	**92.1**
Clinical Instructors & Ward Manager	**35**	**32**	**91.4**
Total	**200**	**184**	**92.1**

Socio demographic characteristics of students

The analysis of data to determine the social demographics characteristics of students indicated that 127(83.6%) were within the age group of 20 – 24 years with a mean age of 23±1.2 and ranged between 21 to 27 years. Sixty-six (66.4%) percent were females compared to 33.6% males. More than three-quarters (83.6%) were single and all had attained 'O' Level education as presented in Table 2.

Table 2. Socio-demographic characteristics of students

Variable	Categories	N	%
Age group in years	20 – 24	127	83.6
	25 – 29	25	16.4
	Total	152	100.0
Mean age±SD (Range)		23±1.2 (21 – 27)	
Gender	Male	51	33.6
	Female	101	66.4
	Total	152	100.0
Marital status	Single	127	83.6
	Married	25	16.4
	Total	152	100.0
Highest level of education	'O' Level	152	100.0

As is illustrated in Table 3, majority of the clinical instructors/ward managers who took part in the study were aged 40 to 44 years with a mean age of 44±5.0 and ranged from 38 to 59 years. (66%) were females with slightly more than half (53.1%) being single. About two-thirds (65.6%) holds BScN degree while 34.4% had MScN degree.

Table 3. Socio-demographic characteristics of clinical instructors'/managers

Variable	Categories	N	%
Age group in years	35 – 39	5	15.6
	40 – 44	14	43.8
	45 – 49	8	25.0
	≥50	5	15.6
	Total	32	100.0
Mean age±SD (Range)		44±5.0 (38 – 59)	
Gender	Male	11	34.4
	Female	21	65.6
	Total	32	100.0
Marital status	Single	17	53.1
	Married	10	31.2
	Divorced	0	0.0
	Widowed	5	15.6
	Total	32	100.0
Highest level of education	BScN	21	65.6
	MScN	11	34.4
	Total	32	100.0

Clinical learning environment factors on clinical learning

A comparison of the mean of student assessment and clinical instructor/managers assessment on four domains that define clinical learning environment – that is ward assignment tasks, clinical placement organization, physical learning equipment and length of clinical attachment was undertaken. Differences between mean students' and clinical instructors'/managers' assessments were tested by applying a paired-sample t test to each of the domains.

Results shows statistically significant mean differences between students and clinical instructors/managers responses with respect to length of clinical attachment (t= - 2.1, p= 0.04) indicating higher mean score for clinical instructors/managers (2.9±0.9) in contrast to that of students (2.5±0.8). Clinical instructors/managers perceived length of clinical attachment as being adequate as opposed to students' self-assessment on the same domain. However, there was no statistical difference between the median scores in clinical environment for both students and clinical instructors/managers responses (p = 0.97).

Factors influencing perceived clinical experiences and clinical learning

To compare the means for student 'assessment and clinical instructors/managers assessment of clinical learning, Generalized Linear Models (GLM) was used since the two samples were independent and assumed to be normally distributed and of unequal size. The outcome variable was taken to be clinical competency which is an indicator for clinical learning.

The influence of clinical learning environment factors on clinical learning

Based on the results shown in Table 5, there is evidence that clinical placement is a significant predictor of clinical learning (F=2.3; p = 0.015). Length of clinical attachment was also marginally significantly associated with clinical learning (F=1.7; p = 0.082). Type of respondent, ward assignment of tasks and physical learning were not significantly associated with clinical learning.

Four domains that define clinical environment were assessed: ward assignment of tasks, clinical placement organization, physical learning equipment and length of clinical attachment. There was a significant association between study participants and the length of clinical attachment (p= 0.04). The clinical instructors and ward managers felt the length of clinical attachment was adequate whereas the students were of contrary opinion. In Weston Cape, a study found out that there was limited time for learning opportunity at the clinical sites due to unhealthy competition among students from other institutions thus interfering with their learning (Dale, et al., 2014) Lekalakala & Caka (2015) also found out that students were unable to practice clinical procedures because of less time allocated. They wanted more opportunity to provide care to a variety of patients with diverse needs at the clinical site. The Dundee Ready-medical Education Environment Measure (DREEM) on the perception of student on time allocated for clinical learning in 4th and 5th year of their study found out that students desired more clinical time exposure in their training (Pinnock et al., 2011). The findings in this study are consistent with the literature as far as time allocated to their study at the clinical site is concerned. They felt time allocated was not sufficient for their clinical learning.

Ward assignment of tasks, clinical placement organization, physical learning equipment and length of clinical attachment that define clinical learning environment were also examined against clinical learning as an outcome. Among the four factors, clinical placement was significantly associated with clinical learning (p= 0.015).

The length of clinical attachment was marginally significantly associated with clinical learning (p= 0.082). Other studies have confirmed the association between clinical placement and clinical learning. Like most of the nursing regulatory bodies, the Kenyan nursing training places importance on supervisory system which emphasizes students' clinical placements as both a context of content and a context of performing. During the clinical placements students both perform and receive support and mentorship on their performance (Robinson, et al., 2008). The clinical supervision conducted by clinical instructors fosters more challenging behaviors: students discuss more of their learning needs, establish more connections between theory and practice, and are more motivated for reflection (Kristofferzon et al., 2013).

Table 4. Mean and standard deviation of student and clinical instructor/managers assessment on clinical learning environment factors.

Item	Categories of participants	n	M±SD	Difference	T	df	p value	Mann-Whitney U test two-sample test (p value)
Ward assignment of tasks	Students	141	2.7±0.5	-0.05	-0.42	166	0.68	0.97
	Clinical teachers	27	2.7±0.5					
Clinical placement organizations	Students	152	2.9±0.5	0.01	0.16	182	0.87	
	Clinical teachers	32	2.9±0.4					
Physical learning equipment	Students	152	2.7±0.6	0.20	1.66	182	0.10	
	Clinical teachers	32	2.5±0.8					
Length of clinical attachment	Students	152	2.5±0.8	-0.30	-2.10	182	0.04	
	Clinical teachers	32	2.9±0.9					

Table 5. Clinical learning environment factors influencing clinical learning.

Source	df	Type 3 sum of squares	Mean squares	F value	p Value
Participant	1	0.38	0.38	1.8	0.182
Ward assignment of tasks	13	2.53	0.19	0.9	0.522
Clinical Placement	12	5.66	0.47	2.3	0.015
Physical learning	14	4.00	0.29	1.4	0.183
Length of clinical attachment	11	3.93	0.36	1.7	0.082

F ratio (F=1.63; p = 0.0133).

This study, however, does not allow us to clarify why the area influences clinical learning in a relevant and independent way. Further research should be conducted to determine the influence of placement area on clinical learning.

Conclusions and Recommendations

Conclusions

Length of clinical attachment influences learning of students at the clinical site. It is also evident that clinical placement is a major predictor of clinical learning. Therefore, provision of adequate time during clinical placement may be important in facilitating students learning.

Recommendations

There is need for hospitals and teaching facilities to establish appropriate planned schedule with adequate time for clinical learning practical. There is also need for nurse managers and educators to carefully plan clinical placements of students and make sure they regularly visit and assist students in their learning. Intervention studies involving larger sample size with wider scope may be needed to establish competency in clinical learning. Further research should be conducted in Kenya to determine more factors influencing clinical learning.

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