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Factors Influencing Student Nurses' Performance in the Final Practical Examination at Gweru School of Nursing

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Abstract

The purpose of this study was to identify leads to factors influencing student nurses' performance in the final year practical examination at Gweru School of Nursing. A descriptive survey was used to collect data from a census of 16 assessors and cluster sample of 35 student nurses. A questionnaire designed for the research and this was complemented by observing student nurses during their final year practical examination. Analysis of assessors' reports was done and interviews were held with repeating students to have in-depth understanding of factors that affected their performance. The study revealed that student nurses made the following errors in their final year practical examination: failure to evaluate the given nursing care, miscalculating drug dosages especially drops per minute needed when administering drugs like intravenous Ringer's Lactate, failure to record and report patient's planned care as well as a lack of knowledge of patients' conditions and results of investigations performed. The study recommends a reduction in the number of students per intake to match the limited resources available. Nurse training hospitals can prioritise equipping the wards so that students learn using authentic equipment. Staff development courses can be held to coordinate the work of the school clinical instructor and ward supervisor/assessor. Students require more exposure to authentic individual nursing care of patients so that they use the individual patients' needs for planned nursing care.

Background to the study

Gweru School of Nursing is one of the schools of nursing in the Midlands Province in Zimbabwe. It was established in 1982 with

sponsorship from the United States of America (USA) government, as a symbol of friendship between the USA and the Zimbabwean governments. The school was commissioned on 1st October, 1982 by Robert Kelly the then American Ambassador to Zimbabwe. Gweru School of Nursing is within Gweru General Hospital complex. Such a set up was intended to facilitate the application of theory to practice during the development of student nurses' practical skills.

The school initially trained State Certified Nurses (SCN). However, in line with the requirements of the Ministry of Health Policy of 1985 regarding nurse training, it has since been transformed into a multi-disciplinary school. The policy emphasised the importance of providing adequate numbers of appropriately trained health manpower who would be key to effective implementation of the goal of Health for All by the Year 2000. The school has also trained SCNs and upgraded them to general nurses. In addition to that, it started a three year general nurse training programme and phased out the SCN training programme in 1993. The first intake of general nurse trainees was enrolled at the school in January, 1997. Currently (2013) the school runs the three year general nurse training programme and a one year midwifery training programme. Likewise, the school admits an average of 90 students per year for general nurses and twenty students per year for midwifery. Of significance is the fact that the school aims at facilitating acquisition of nursing skills through marrying theory to practice.

Learning specific nursing skills requires training in theory and practice. In fact, this is achieved through meeting the following needs: explanations for students to understand why the skill is carried out in the manner in which it is done and the doing detail that also needs to be well understood. In this case, the role of background information is to enhance understanding. Student nurses, therefore, must be aware of precisely what they are expected to do (content), why they should do it that way (rationale) and how it should be done (procedure). This is the doing detail which students learn best through demonstration. In return demonstration students must practise the skill to perfection and be able to check and correct themselves as well as the teacher. In order to do these demonstrations, student nurses require reference in the form of

notes, handouts and practical models. Recommended teaching methods include lectures, discussions, demonstrations, return demonstrations and role plays.

According to the *General Nurses' Training Teaching Guide* (2011), nurse training in Zimbabwe follows a block system whereby students receive theoretical input for a specified period and thereafter are attached to the relevant clinical settings for practical experience. The time allocated for theory amounts to 28% of the three years, while clinical attachment accounts for 72% of the time. The time allocation ratio of theory to practice is: 7:18; and this implies that skills development is very important in nursing. Consequently the performance of student nurses' in the practical examinations needs to be addressed.

As Fuszard (1995) observes, students blend theoretical knowledge with experiential learning to bring about those activities known collectively as nursing. This is possible in guided situations. The author's observation supports the need for students' guidance in applying theory into practice. Indeed teaching of practical skills demands that the nurse educator assumes diverse roles of instructor, demonstrator and evaluator of students. McClaskay and Grace (1997) view knowledge used by nurses while engaging in practice as coming from many sources including sociology and biology. Their courses are carefully selected from many disciplines like biophysical science, social science and nursing sciences as the initial sources of knowledge. What is not documented, in various studies, are the errors made by students and factors contributing to their underperformance in the final year practical examination.

This study is focused on student nurses' performance during the final year practical examinations because they show the quality of nurse that Gweru School of Nursing is releasing to the nation. Petty (2004) suggests that a true reflection of learning that has taken place is possible if testing is done under authentic conditions such as those provided in practicals. There is need to recap, review and apply earlier work to ensure that previous learning is not forgotten and can be linked and

applied to the current lesson. Learners always require an opportunity to ask questions so that further explanations are afforded and assist in evaluation of students' understanding. So a combination of explanation and doing is expected to assist during effective learning of skills. Perfection of skills is further enhanced by continuous practice, checking and correcting errors until the skill is mastered to suit individual patients. For both students and tutors to be confident that learning has taken place, learning has to be evaluated by practical examinations conducted at the end of each level to assess students' competency and ability to apply theory into practice.

Above all, the final practical examinations require that the student assumes the responsibility of a nurse manager, managing a particular ward for a full working day. This examination requires the student to apply the theory he or she learnt during the period of training. Unfortunately this is the examination in which students are underperforming. While the final year practical examination is designed to test knowledge, skills and abilities essential for safe and effective practice of nursing, the environment under which the assessment is conducted seems to affect the performance of the students. Wilock (2011) posited that it was unpleasant for students to be observed by their tutors. Their feelings were combined with embarrassment and fear of making errors. Rather than assuming, the study identifies student nurses' errors as a basis for remedial instruction in nurse skills development.

Statement of the problem

This study is motivated by the observation that general nurse students at Gweru School of Nursing are under performing in their final year practical examinations. An analysis of results for both theory and practical examinations from three consecutive years (2006-2008) revealed that students performed better in theory examination with an average pass rate of 68% compared to that of their practical examinations whose average mark was 55%. In fact, the practical nursing examination is what the outside world calls nursing, hence it is very important.

The problem of underperformance affects the students who are required to take a supplementary practical examination. The pass rates decline leading to bad reputation for tutors and the institution. If students are compelled to drop, a national resource is lost and the resources that went into the training of that student go to waste. Attempts to use tutorials are affected by the limited number of qualified nurse tutors against a large number of student nurses. The other hurdle is that tutors are not sure of the actual errors and factors affecting student nurses' performance in the final year practical examinations. This study sought to identify the errors, factors and strategies to improve the teaching of nursing practice measured by student nurses' performance in their final year practical examinations.

Research questions

The problem described demand answers to these three questions:

- i) What errors do student nurses' make in the final year practical examination?
- ii) What factors affect performance of student nurses in the final year practical examination?
- iii) What instructional strategies can improve performance of student nurses in their final year practical examination?

Significance of the study

The study seeks to improve the training of student nurses during the development of their practical nursing skills. The study contributes literature on factors influencing the performance of nursing students. It also provides instructional strategies for the benefit of nurse educators teaching practical examination and practical skills development to their students. In addition, it provides a basis for the development of research skills for a researcher with interest in the training of health personnel.

Literature review

Models for nurse skills development

A number of authorities have defined skills from different perspectives. Rennie (2009) quotes a definition by National Health Service Education for Scotland (2007), which refers to a skill as any action

performed by an employee involved in direct patient care which impacts on clinical outcome in a measurable way. From the definition, it could be deduced that skills required include: technical skills like clinical examinations and procedures; non-technical skills such as team work, communication; as well as cognitive skills like clinical reasoning and decision making. This definition seems to imply that every action, behaviour and decision is a clinical skill. However, in nursing, formal skills teaching was often limited to procedures like wound dressing, catheterisation, venipuncture, or monitoring a drip. Today more individual diagnostic skills are required to match the complexities of the individual patient's needs.

Specifically, Baillie (2005) reiterates that achievement of competence requires mastery of an array of skills which includes practical, communication as well as management skills. Rennie (2009) and Baillie (2005) concur that practical skills exhibited both affective and cognitive dimensions. Such dimensions would enable a nurse to be sensitive, and show concern for the patient. The cognitive dimension accounted for the nurse's attitude and approach to clients. It is demonstrated in the thinking element behind a skill, including application of theory to practice and problem solving. This flexible combination is essential for a nurse to adapt to practice. A nurse needs to understand the principles behind a skill. For example, understanding principles behind the administration of oxygen therapy enables the nurse to choose a method of administration that is appropriate to the client's specific clinical situation.

Models for skills development

Several models for skills development have been developed. The Dreyfus Model for skills acquisition was developed by Dreyfus and Dreyfus in 1986. The model asserts that students acquire skills through formal instruction. The model acknowledges that skills development occurs in five distinct stages ranging from novice to expert. These stages are summarised in Table 1.

Table 1

Dreyfus and Dreyfus stages of skills development

Stage	Learner operation characteristics
Novice	<ul style="list-style-type: none"> ✓ Practice is based on knowledge acquired through formal learning ✓ Action is limited, inflexible and confined to learned rules ✓ Can not differentiate relevant from non-relevant aspects of a given individual patient
Advanced beginner	<ul style="list-style-type: none"> ✓ Performance level is at a marginally acceptable level after gaining some experience ✓ Learner remains task oriented ✓ Clinical practice is centred on personal goals of succeeding rather than patient goals of survival ✓ Can recognise differences in situations but lacks experience to manage them as unique cases ✓ Requires clinical instructor or ward mentor assistance
Competent stage	<ul style="list-style-type: none"> ✓ Learner shifts focus on clinical issues rather than self performance ✓ There is integration of clinical theoretical knowledge into practice ✓ Learner can be emotionally involved in his/her nursing activities
Proficient Stage	<ul style="list-style-type: none"> ✓ Learner improves reasoning and applies rationale for nursing actions taken ✓ Learner reduced stress levels as required action becomes clearer and reasoning power improves ✓ Operates at collegial levels with mentors
Expert	<ul style="list-style-type: none"> ✓ Has skills to discriminate when to act and when to wait ✓ Theory is evaluated and understood in relation to practice

The model guides assessment of skills development and define a desired level of competence as the competent, proficient and expert. Employing this model during student nurse instruction requires that the student nurse be under a very watchful eye of a mentor at the advanced

beginner level. Any unguided experimental activity may result in a patient's death. The clinical instructor should support the student in developing practical skills and give an opportunity for understanding learning needs and styles of learning at different levels of skill acquisition.

A study by Heitman (2008) described skill development through the social model and mentors. The study recognised the role of mentors as role models in the creation of a supportive learning environment. Darling (as cited in Gopee, 2008) suggests that one of the roles of a mentor is notably as a role model. Role models are highly regarded individuals who are expected to uphold professional standards. Dreyfus (2001) explains that people acquired skills within their practice domain by imitating experts. In this case nurse tutors, clinical instructors and nurse managers in the wards need to perform expertly in order to assist students as both mentors and role models.

In this case, roles of mentors as identified by Greenberg and Baron (1995) include providing the much needed support and confidence to those who may feel insecure at the advanced beginners' stage. Mentors provide the student an opportunity to demonstrate competence, protect students from consequences of errors and help students avoid situations that may prove risky for their desired nursing career. This implies that mentors have an important facilitating role in the development of practical skills by student nurses.

In fact, Koziar, Erb and Blairs (1997) consider mentors as competent and experienced professionals whose relationship with students is developed for purposes of providing advice, support and information in order to facilitate the development of practical skills of an individual student. In the clinical area, mentors are usually the nurse managers who organise, co-ordinate students' learning activities and supervise students in learning situations. They also assess students' skills, attitudes and behaviours, including helping students evaluate their practical skills to identify their practical strengths and weaknesses. From this angle, mentors perform more instructional roles than role models.

An associated concept to learning through mentors was observational learning. Greenberg and Baron (1995) viewed observational learning as learning through imitating the behaviour of others, i.e., the models. For observational learning to take place effectively, several processes have been described by the two authors:

- i) Students have to learn to pay great attention to the model, for it is with that greater attention that more effective learning will take place.
- ii) Students need to ensure retention of the model's behaviour because learning takes place if the behaviour can be remembered.
- iii) Behaviour has to be remembered in order for it to be reproduced.
- iv) Students must be motivated to learn from a model because it has been noted that people do not learn from everything they see, but focus on those things they may have reason or incentive to watch.

Generally speaking students, given an opportunity to observe experts doing their job, follow by chance the practice of desired skills and give feedback on their performance. It is important to acknowledge that observational learning also occurred in both formal and informal manner. As such it has to be borne in mind by every qualified nurse educator that there is need to act proficiently all the time as every situation in the clinical environment is a learning experience for student nurses.

However, the situation in most training hospitals in Zimbabwe is characterised by large size class, shortage of experienced nurses and clinical instructors. This lack of experience negatively affects the teaching of skills by mentors. Many students end up with limited models to emulate. *The Nursing and Midwifery Council Report* of 2008 supported this notion by acknowledging lack of experience by mentors as the reason for their uncertainty about skills to teach.

The Taxonomy of Experiential Learning by Steirnakar and Bell (2001) is a five level model of competence development. The authors conceptualised learning as a sequence of progressive steps namely: exposure, participation, identification, internalisation and

dissemination. According to the model, exposure represented a student nurse's consciousness of the skill and anticipation of involvement in a practical situation. Participation becomes the actual involvement in the skill. This is the stage when a student tries out the skill. It can be paralleled with the novice stage of Dreyfus and Dreyfus (1986).

The identification of prior learning is a stage which is achieved when the student applies earlier learned experiences and knowledge to a particular situation. Once the student attained this stage, internalisation of learned concepts appears to bring the student to a stage of dissemination where the student is able to teach others the skill through demonstrations. Usually student nurse clinical area assessors identify students' errors either at the participation and involvement or dissemination stages. They may not know where and when the error developed. Hence the puzzle calls for a systematic study of students' errors and factors affecting student nurses' performance in final year practical examinations.

The model brings about the importance of nurse educators' assessment of student learning. The assessment should ensure that every student achieved each level of competence successfully in order to be competent in the taught practical skills. This research was premised on the view that supportive efforts directed towards students' attainment of each level of competence would facilitate excellence in students' practical skill performance and instil confidence in the students.

Factors influencing nurse competencies

Many authors have defined competency from various angles. Ogunniyi (1986:259) defined competency "as possession of critically required abilities, knowledge, judgement, skills, attitude, values and proficient use of the same attributes." The array of variables that constitute competency speaks volumes of the effort to be employed to teach this skill. The strategies should concentrate on delivering substantive information, conceptual understanding and reasoning.

Literature reveals that the very nature of competence teaching and learning is a factor that influences nurse competency. Reilly and Omann (1992) proposed that individuals have channels of handling information such that any information above that capacity results in

increasing the number of errors. Since students' learning channel capacity is a cognitive individual variable, nurse educators are unable to determine it. Their focussing on the syllabus content rather than individual student capacity contributes to students making more errors. Therefore, schools of nursing need to focus on application of skills as opposed to recall of information. After all clients cannot judge the competency of a nurse who knows everything about diabetes but fails to manage a client with the condition. For skills development, the school needs to move away from teacher directed learning to student directed learning. This would ensure that instruction in both school and clinical setting utilised each encounter as a skills learning situation.

Nickse (1981) proposed important principles that underlined development of competencies. One of these principles was the importance of employing diverse learning styles to achieve competence as well as the motivational nature of competence itself. The motivational force was the student's desire to become sufficiently competent to do something. Lack of motivation negatively affects competency if students lack willingness to perform. A nurse tutor who manages to sustain motivation to learn among his or her student nurses is likely to achieve the desired competencies among the students.

The fluidity of the nature of nursing information and technology complicated demonstration of competence, hence the need to keep abreast with the changes that take place. Grundy (2001) identified continued education as a key factor towards achieving competence. An environment characterised by co-operation, support and availability of resources tended to foster competence. Hence factors affecting student nurses' performance in final year practical examinations require investigating the practical task, the student, training methods or the hospital situation itself.

Studies in nurse practical examination

In a survey of views on methods of assessing competence in nursing carried out in the United States of America by Annie, Hunt and Gordon in 2002, observation was identified as the most common valid method of assessing practical skills. The majority of student nurses felt that the presence of assessors was sufficient to raise their anxiety levels which

adversely affected the quality of their performance. The researchers also found weaknesses of observation as a method of assessment. They attributed the weaknesses to subjectivity of the observers, student's degree of anxiety and preparedness as well as prevailing environment in the clinical setting.

Although the study findings compared well to the situation in Zimbabwe in that observation was used as a method of assessment, the two settings are different thereby affecting ecological validity and reliability of the findings.

A joint survey of evaluation of performance for graduates of nursing programmes was carried out by Zimbabwe's Ministry of Health and Child Welfare and the World Health Organisation (1990) in Kenya. The study population comprised graduates with experience of six to twelve months, supervisors, tutors and clinical instructors. The study findings revealed that supervisors and teachers concurred that students' performance was satisfactory in taking patients' histories, health education and interpersonal relationship. Majority of graduates identified weaknesses in giving bedside care and behaving in a professional manner. The majority of students indicated the need for the programme to strengthen the teaching of pharmacology, psychology, sociology, communication and health assessment. Improved pharmacology teaching was expected to increase the confidence of nurses in performing drug administration and patient education, thereby decreasing anxieties associated with these nursing duties. The behavioural sciences help nurses to understand human behaviour and relationships in order to develop an integrated approach to nursing care which would ensure the development of social skills that act as therapeutic interventions in patient care. For instance, some patients get ill because of psychological problems and the therapy needed to cure them may only be counselling and this requires effective communication between the client and the nurse.

Errors in practical nursing

A number of definitions have been given for errors. From Benner et al., (2002) healthcare errors are mistakes, omissions or unintended occurrences or events which may or may not result in patient injury.

These errors have the potential to cause harm not only to the patient but also the family, the nurse as well as the profession. Jona (as cited in Benner et al., 2002) concluded that contributing factors for practical nursing errors arose from: lack of attentiveness, lack of urgency, inappropriate judgement, mistaken prescriptions as well as medication errors. Analysing the errors offered a great opportunity for developing strategies to reduce them.

In any case, in hospitals correction of errors is through monitoring and evaluation of care delivered targeting the individual nurse or the system. Student nurses provide direct nursing care to patients and are part of the patient's experiences during hospitalisation. As a result there are instances when student nurses found themselves making mistakes. One of the common errors students made, as observed by Baillie (2009), was drug administration. Since a drug administration error cannot be retracted the patient is the one who suffers. Students are encouraged to open up if they have problems with particular practical skills. It is critical for students' performance in practicals to be precise to serve life.

Measures to minimise errors by the student nurses included the need for students to work under a supervisor and clinical instructor who would offer assistance if the student is performing the skill for the first time. Students are assisted through assessment of their strengths and weaknesses in order to find possible solutions. This is critical in the advanced beginner's stage of Dreyfus and Dreyfus (1986).

Methodology

Research design

The study applied a quantitative descriptive survey research design. The strength of a descriptive survey, according to O' Leary (2004), is that quantitative descriptive surveys can facilitate the description of errors and the detection of factors affecting student nurses' performance in practical examinations. It can be used to gather information through asking the same questions to the same group of people. The survey will identify the views of tutors and student nurses on factors influencing student nurses' performance in final practical examination, and their views on strategies to improve performance.

Denscombe (2010:12) points out that descriptive survey is “best and effective when a researcher wants factual information relating to individuals and groups”. In this study, a quantitative descriptive survey was considered ideal since the study aimed to identify and describe views of assessors and students on performance of student nurses in the final nurse practical examination. Some of the limitations of descriptive survey for this study included the fact that it could not predict errors in future performance and new factors. It is limited to the present and leaves the future to speculation.

Research instruments

The major instrument used for this study was the questionnaire. It was designed by the researcher specifically for this study. It sought views of students and assessors on factors influencing students' performance in the final nurse practical examination and suggestions on how to teach to improve performance by students. The questionnaire was adopted to enable collection of information from a large sample. Moreover the population was literate and therefore able to write their responses. Individual views were required within a short time. The questionnaire also allowed the respondents to include any information that they wished to be considered in the study.

Limitations inherent in the use of the questionnaire, which can be recognised in this study, include the fact that it is devoid of the interactive aspect. Respondents cannot seek clarification. Questionnaires have a low response rate which interferes with sample validity of the study. To counteract the low response rate, double the number of expected responses was sent out and follow-ups for the sent out questionnaires was done. Interviews also helped to capture information missed by the questionnaire.

The second sets of instruments are documents which include student nurses' notebooks for practicals to find the content of what they were taught to do. Practical Assessment Forms were analysed for errors and the assessing tutor's comments.

Summary of instruments

Instrument	Variable sought
Questionnaire	<ul style="list-style-type: none">▪ Factors influencing student performance▪ Errors made by student nurses
Documentary analysis	<ul style="list-style-type: none">▪ Strong and weak points of the student nurses
Practical assessment report	<ul style="list-style-type: none">▪ Students' practical skills guidance expected
Practical assessment forms	<ul style="list-style-type: none">▪ Students' errors and tutor's comments

Population and sampling

The population target of this study was composed of 75 final year students and 8 assessors. The number of students taking the final year examination for each group was known hence this was a finite population. Since the total sample frame was also known, probability sampling was applicable. Students' performance depended on intake, and each intake has unique aspects which facilitated or affected their performance in practical examinations. This study considers each intake as a cluster. Hence cluster sampling was applied.

The number of students differed from intake to intake hence proportional sampling was used to select participants among the groups. Simple random sampling was used within the group to cater for uniform distribution of errors and factors influencing their performance in practical examinations. Random numbers generated by a computer were matched to the last three digits of students' registration numbers. This was done until a sample size ($n = 35$) of student respondents was raised. Since the number of assessors was limited, purposive sampling, namely census, was used to include all assessors, sample size ($n = 16$). The sample was composed of 8 assessors from the actual study and 8 assessors from pilot study.

The sample size ($N = 51$) for students and assessors was large enough for the variables to be normally distributed and findings generalised

with limited adjustment to training health institutions like Gweru General Hospital.

A purposive sample of 45 practical skills assessors' reports was analysed. Reports were selected on the basis of the student having failed the final year practical examination. For this study, reports were selected from 2009 to 2012. These were available in the nursing school. Interviews with 7 students who were repeating practical examinations were held to get insights into the problem. In this case, selection was based on their availability. These were also anticipated to be rich sources of views on students' errors and factors affecting their performance in final year practical examinations.

Data collection

The researcher sought permission to study the performance of student nurses in the final year nurse practical examination from the Medical Superintendent of Gweru Provincial Hospital who is the head of the institution. A pilot test was conducted using a group of final year students at United Bulawayo Hospitals and Chinhoyi Provincial Hospital to test the appropriateness of the instruments. These students were similar to the target group at Gweru General Hospital in that they were final year nursing students and they also sit the same final year practical examination under the same conditions. Adjustments to the instrument were aimed at improving its validity and reliability. Questionnaires were distributed to sampled students and nurse assessors who were willing to participate in the study. Researchers interviewed a total of 7 students who had failed their final year practical examinations and were repeating. Interview participants allowed researchers to record their answers. They also verified the recorded responses. Interviews were guided by the open-ended question: *What do you think contributed to your failing the final year practical examinations?*

Data analysis and presentation

An analysis of the interview responses was carried out by identifying factors under the themes: student factors, tutor factors, ward supervisor factors and examination factors. Tallies were applied to identify common factors with high recurrence. Errors and suggestions were presented in tables and percentages used to facilitate comparison of variable distribution.

Findings and discussions

Table 2

Student nurses distribution by age and gender

Age group in years	22-26	27-30	
Male	3 (9%)	5 (14%)	0
Female	4 (11%)	17 (49%)	6 (17%)
Total	7 (20%)	22(63%)	6 (17%)

N= 35

Table 2 shows that the majority of participating students (63%) were in the age range of 27-30 years. Students in that age group are assumed to be able to evaluate their learning and deduce factors that affect their performance. All of them are adults expected to be motivated by task oriented learning dominated by practical activities. Meachin and Webb (1996) observed that adults are also committed to learning. This sample was predominantly composed of female students (77%) which shows that although males have infiltrated nursing, it is still dominated by the female gender hence the findings reflect a female dominated bias.

Table 3

Assessors distribution by gender and age

Age range	25-30	31-36	37-42	
Males	0	1(6%)	0	3(19%)
Females	1(6%)	2 (13%)	5 (31%)	4 (25%)
Total	1(6%)	3(19%)	5(31%)	7(44%)

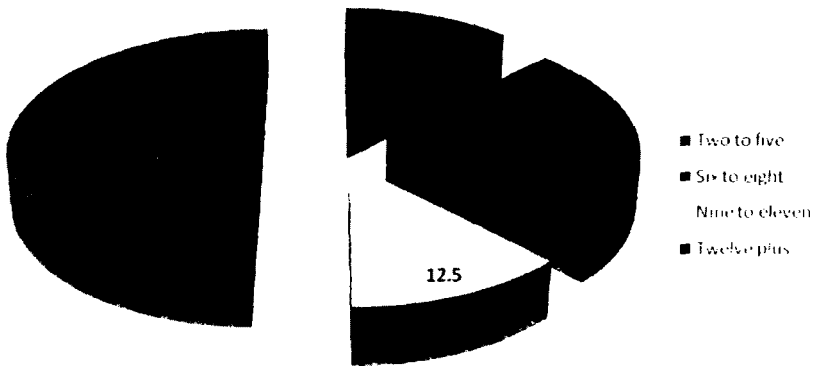
N = 16

Table 3 reflects a negatively skewed age distribution for the assessors. Being a practical assessor is dependent on experience and being an expert in the practice. This group of nurses is expected to be in the fifth stage level of skills development of Dreyfus and Dreyfus (1986). This

study regards them as rich sources of information on students' errors, factors affecting students' performance and possible suggestions for improvements. The majority of assessors were females (75%). This implies that the female influence dominated the views of assessors.

Table 4

Distribution of assessors by years of experience



N = 16

Table 4 shows that the majority (50%) of assessors had more than 12 years in the nursing field. This presented a wealthy of experience in the nursing field that would be valuable in the teaching and learning of students. This is supported by Mellish and Brink (1990) who viewed experience gained over years leading to development of expertise over years as being of great importance to students. As such the assessors would be able to appraise students' performance and counsel them accordingly.

Students' errors

Table 5 provides a summarised analysis of errors from 45 reports and 16 questionnaire responses from assessors, 7 student interviews and observations of 5 practical mock examinations exercises:

Table 5

Distribution of Student nurses' errors in the final practical examination

Error noted	Frequency	Percentage
Failing to evaluate nursing care plans for patients under their care	54	79%
Miscalculating the rate of infusion for drugs like intravenous fluids	47	69%
Failure to record doctor's prescriptions and incorporating changes to plan of care	42	62%
Lack of knowledge about a patient's general condition and results of performed medical tests	36	53%
Inability to tell correct patient reaction to reversal drugs	35	51%
Failure to tell possible patient reaction to specific drugs	31	45%
Inability to link patient's health history to current medication	27	40%

N = 68

The analysis of reports and observations of assessors on the performance of student nurses during the final practical examination revealed that the majority of student nurses (40%) gave inaccurate results of medical tests performed on patients under their care. The study made the conclusion that this lack of knowledge accounted for difficulties student nurses experienced in evaluating patients' nursing care plans (79%) in Table 5. Failing to calculate the rate of infusion of drugs such as intravenous fluids (69%) can be attributed to the recruitment of student nurses without an 'O' level pass in mathematics. Findings confirmed those by Kuneka and Chinamasa (2012) who reported that nurses without an 'O' level pass in mathematics experienced problems with calculating dosages.

It is interesting to note that student nurses failed to record doctors' prescription (62%) and failed to link a patient's recorded health history (40%). Interviewed student nurses pointed out that they were deployed into the wards without lectures on doctors' medical language. One student pointed out that the doctor was Chinese and hence his pronunciation of English words was not comprehensible to students. They suggested that student nurses be given lessons on ward medical language.

Researchers deduced two issues. Firstly, there is a communication breakdown between student nurses and doctors which may jeopardise the patient's life. Secondly, there is limited co-ordination between the school clinical instructor and ward supervisor. Student nurses considered the practical examination as another course not linked to the theory that they did in the nursing school.

Table 6

Factors affecting students' performance in the final practical examination

Factor	Frequency	Percentage
Fear of assessors resulting in students lacking confidence	41	68%
Students' limited application of theoretical knowledge	34	57%
Lack of mentors and clinical instructors to guide students	29	48%
Shortage of resources	36	60%
Clinical instructor limited skills to teach practical skills to student nurses	24	40%
Lack of commitment by qualified staff to guide and teach students	15	25%
Difference in expectations between theory and practical tutor in clinical area	26	43%
Limited practice sessions to develop confidence and expose the student nurse to as many patient situations as possible	30	50%

Table 6 reveals that 68% of students are afraid of their assessors and failing the examination. Researchers attributed the intensity of this fear to nursing ethics which emphasise a hierarchical system of rank and seniority similar to a military establishment. The explanation is that they are dealing with life hence there should be no room for challenges. Students' limited applied knowledge (57%) can be linked to limited practical sessions (50%). Clinical supervision attempts to give continuous feedback regarding student nurses' performance. This is despite the fact that 50% of the assessors have a nursing experience of more than 12 years. This mismatch could be attributed to a high ratio of student nurse to clinical instructor.

Table 7

Strategies to improve performance in practical examinations

Strategy	Frequency	Percentage
More demonstrations and return demonstration of skills	47	69%
More supervision by nurse tutors and clinical instructors to help student nurses master practical skills	37	54%
Continuous evaluation of students' performance and assisting weak students through tutorials	30	44%
Topic presentations by both students and staff to improve theory	39	57%
Improving availability of material resources, e.g. stationery, drugs and surgical sundries, e.g. sterile packs; diagnostic gadgets, e.g. thermometers, sphygmomanometer and glucometers	35	51%
In-service training for qualified nurses on practical skills teaching	21	31%
Introducing lessons on doctor and nurse communication language	42	62%

N = 68

Findings in Table 7 call for increased practice and exposure (69%) of students to practicals. Assessors pointed out that the syllabus time allocation for both theory and practice is limited. In some circumstances hospital schools have given some theory lecture hours to practice

sessions. Unfortunately, the hours were not recovered, compelling tutors to rush by dictating notes instead of either discussion or teaching. The majority of these strategies are hinged on the availability of senior tutors. One suggestion was that school clinical instructors can use the weekend days to teach practical skills in the wards. They can use authentic patient cases rather than simulated settings like demonstration rooms and the actual work place (clinical area) to teach students. In this way the students' strengths and weaknesses could be identified so that instructors could help in problem areas. A relatively new finding which is coming out prominently is the introduction of nurse-doctor communication (62%). This is a policy issue that management in nursing schools should address.

Recommendations

On the basis of these findings, the study makes the following recommendations:

1. Doctor-student nurse communication lessons should be introduced to improve communication and performance of nursing students in their final year practical examination.
2. Instead of continuously producing nurses who are not competent enough to give proper care to patients, nursing schools should consider reducing the number of students per intake to match the limited resources available.
3. Nursing school clinical instructors could use weekends to teach practical skills in the wards.
4. The same nurse tutor teaching theory could also take students for clinical practicals to reduce differences in conveying information.
5. More time should be allocated to nursing practicals so that student nurses can be divided into smaller groups for clinical practical lessons.
6. Nursing schools charge an extra \$10 per student per term for ward equipment. Alternatively student nurses can be engaged in fund raising ventures for modern hospital equipment.
7. Budgets of nurse training hospitals should prioritise equipping the wards with modern equipment so that students do practicals using authentic equipment that theory refers to in the classroom. This would facilitate the application of theory into practice.

Conclusion

The Zimbabwe General Nurses' Training Regulations (2000) state that student nurses should always perform nursing duties under the supervision of qualified nurses. With this background, the study concluded that students did not have adequate exposure to practical skills training due to shortage of clinical instructors and mentors. Lack of exposure coupled with shortage of stationery, drugs and surgical sundries mean students lack authentic conditions to hone their practical skills for effective skills development. Improvised nursing procedures, however, do not develop their practical skills to expected levels. A high instructor-student ratio of up to 1:15 makes it difficult to attend to learning needs of every student. A ratio of 1:5 would be appropriate if students were to get more exposure to clinical settings with adequate supervision. Lack of human resources in training hospitals not only entails that student nurses fail to get the needed guidance and supervision, but also means that students are being used as pairs of cheap hands in the provision of nursing care to patients at the expense of their learning.

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