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Barriers of physical assessment skills among nursing students during hospital clinical training

Amjed Abdulabbas Shraida
Faculty of Nursing, University of Kufa, Kufa, Iraq

Abstract
Physical examination skills are one component of health assessment and an essential component of nursing care operations. These skills play a critical role in collecting objective data to identify patient problems and care for their needs. As a result, a more accurate assessment leads to a correct nursing diagnosis and increases the quality of nursing care. Thus, teaching physical assessment skills is vital to ensure nurses' competency، While universities constantly strive to develop competency-based curricula that will prepare new nurses for independent practice, few studies have evaluated the application of physical assessment skills learned during nursing education in the real-world environment of clinical practice. Therefore, the current study aims to assess the barriers in the performance of physical assessment skills among nursing collegian during hospital clinical training.
Study Design: A descriptive study was carried out through the present study in order to achieve the early stated objectives.
Study Sample: A probability (Stratified Random) sample of (100) students was included in the present study.
Setting of the Study: The study is conducted in Kufa University / Faculty of Nursing.
Conclusions and Result: The current study indicates that a large number of nursing students face many obstacles in applying physical assessment skills during clinical training in the hospital, which in turn can affect the quality of health care provided to patients.
Recommendations: Increasing training time can play an important role in improving physical assessment skills, and increasing the number of visits to training places can help students increase their expertise and adapt to the field of specialization.

Keywords: Barriers, physical assessment skills, clinical training

Introduction

Nursing programs prepare graduates to practice as entry-level nurses based on competencies established by regulatory bodies that oversee nursing licensure. Colleges and universities offer a variety of formats for nursing programs and, regardless of the length of the program or facility location, all offer instruction in physical assessment skills. Preparing nurses of the future includes developing a curriculum that aligns with the physical assessment skills taught in nursing programs globally [1].

Physical assessment is an organized systemic process of collecting objective and subjective data based on health history and head-to-toe or general body systems examination [2]. Physical examination skills are one component of a health assessment and a key element in nursing care processes [3, 4]. These skills play a crucial role in gathering objective data for identifying the patient's problems and caring for their needs. Consequently, a more precise assessment leads to a correct nursing diagnosis and increases the quality of nursing care. Thus, teaching physical assessment skills is vital for ensuring nurses' competency. The American Association of Colleges of Nursing defines physical examination as one of the most important components of the basic skills that need to be improved in professional nursing education and recommends the use of simulation methods [4].

Conducting a physical assessment is widely considered a core competency of entry-level Registered Nurses, thus it is a requirement for undergraduate nursing programs to develop students' competency in physical assessment skills [5]. Therefore, nursing curricula prepare graduates to meet current and future healthcare demands for the care of individual patients, as well as providing population-based care. Programs are expected to comprehensively cover the essential skills to enable a graduating nurse to practice. Physical assessment skills, including inspection, palpation, auscultation, and percussion, are part of the ongoing assessment necessary when collecting information to determine client status. Furthermore, the physical assessment provides the basis for planning nursing interventions that enhance safe and competent patient care [1].

Nursing programs typically educate students to perform over 120 physical assessment skills, yet only a subset of these skills are routinely used by RNs in clinical practice. One particular study found that 925% of physical assessment skills on a 120-item survey were taught and practiced in nursing degree programs, yet only 29% of the skills were actually used on a daily or weekly basis by practicing nurses. Another study also found that among 193 RNs, only 30 of 126 physical assessment skills surveyed were reported to be routinely performed. The remaining skills were performed occasionally or not at all. Secondary data analysis comparing 48 associate degree and 48 bachelor degree-prepared RNs matched by clinical area and years of experience found that the frequency of physical examinations did not differ by educational preparation or years of experience [6]. Taken together, Taken together, these findings indicate a gap between the concept of physical assessment and its practice in clinical exposure. This is very alarming since nurses are primarily responsible for patient care, yet cannot competently perform basic assessment tasks. The incompetence could lead to a lack of optimum patient care in performing health assessments [7].

Existing research on barriers to RNs' use of physical assessment is sparse. As physical assessment skills came to occupy a more prominent role in nursing degree programs in the US during the 1980s, a few early studies investigated perceived attitudes or barriers to their use among degree-prepared nurses or nursing students. Although the data reported were limited, key barriers identified were a lack of confidence or competence to perform skills, the perception that physical assessment was performed by physicians or was not a nursing responsibility, and a lack of peer support [6].

Significance of the Problem

The demands placed on newly qualified nurses by increasingly complex health systems, together with the explosion of knowledge and the use of increasing technology, reinforce the need for skilled new graduates. Studies over the past decade suggest that graduates are not meeting competency expectations from the employer's point of view, or are not 'practice ready'. Concomitantly, various studies have described a mismatch between what is taught in pre-registration programs and the ability of new nurses to function in clinical situations. While universities constantly strive to develop competency-based curricula that will prepare new nurses for independent practice, few studies have evaluated the application of physical assessment skills learned during nursing education in the real-world environment of clinical practice [8]. Therefore, the current study aims to assess the barriers in the performance of physical assessment skills among nursing students during hospital clinical training.

Methodology

Study Design: A descriptive study has been used in the present study in order to assess the barriers of physical assessment skills among nursing students during hospital clinical training. From the period of 16/12/2023 – 22/5/2024.

Administrative Agreements: The researcher gets consent from the Fundamental Nursing Branch in the Faculty of Nursing / University of Kufa. The consent made it easy to arrive at the institutions and meet the students for the necessary data after obtaining their permission to participate in the study.

Setting of the Study: The study is conducted in Kufa University / Faculty of Nursing.

Study Sample: A probability (Stratified Random) sample of (100) students was included in the present study.

Criteria for the Sample Inclusion

1. Male and female
2. Nursing students taking physical assessment theory and practical subject
3. Students with clinical duties
4. 2nd year, 3rd year, and 4th year nursing students,
5. Voluntarily consented in participating the study.

Exclusion criteria: 1st year nursing students (since no subject and exposure to the physical assessment subject).

Study Instrument

An assessment tool used to assess barriers of physical assessment skills among nursing students during hospital clinical training. The final study instrument consisted of two parts as the following:

Part I: Socio-Demographic Data Related to the Student Group Participants

This part is concerned with the collection of basic socio-demographic data, this part includes (age, gender, stage, and clinical training location).

Part II: Scale of Barriers of Physical Assessment Skills among Nursing Students

The second part contains perceived barriers to physical assessment statements. Participants answered the extent to which they agreed with each statement applied to their practice on a 5-point Likert-type scale from 1 = strongly disagree, 5 = strongly agree. This contains seven subscales with a total of 38 items statements, these sub-scales include: "reliance on others and technology", consists of (9) items; "lack of time and interruptions", consists of (6) items; "ward culture", consists of (6) items; "lack of confidence", consists of (4) items; "depend on nursing role models", consist of (4) items; "influence on patient care", consists of (4) items; "specialty area", consists of (5) items [7].

Data collection: The data collection was done in Kufa University / Faculty of Nursing. One hundred nursing students were assigned based on the stratified random technique. After that, the data were collected through the utilization of the Arabic version of the standardized self-report questionnaire.

Results of the study

Table 1: Statistical summary of the participating collegian characteristics (n = 100)

Sample characteristics	Male = 55 (%)	Female = 45 (%)	Total
Age (years)			
19 - 22	22 (40.0)	39 (86.7)	61
23 - 26	27 (49.1)	5 (11.1)	32
27+	6 (10.9)	1 (2.2)	7
Mean ± SD.	23.22 ± 2.30	21.40 ± 1.88	
Stage			
Second Stage	16 (29.1)	18 (40.0)	34
Third Stage	16 (29.1)	19 (42.2)	35
Fourth Stage	23 (41.8)	8 (17.8)	31

This table indicates that male students represent (55%) and females represent (45%) of the total number of participating nursing students, which amounts to 100 students which represents an equal representation of the study population. In addition, (49.1%) of male nursing students are between (23-26) years old, and (41.8%) of them are in the fourth study stage. While, (86.7%) of female nursing students are between (19-22) years old, and (42.2%) of them are in the third study stage.

Table 2: Percentage of nursing students participating in the study who agreed with each subscale item (n = 100)

Subscale	Strongly agree/agree** Freq. (%)
1. Reliance on others and technology	
It's not the nurse's role to conduct a physical assessment of the patient	15 (15.0)
I can gather all the physical assessment data I need using electronic monitoring devices.	27 (27.0)
The use of technology reduces the need for nurses' physical assessment skills	31 (31.0)
Nurses don't need to use many physical assessment skills to do their job well	11 (11.0)
I see physical assessment as something only the doctor does.	23 (23.0)
I tend to rely on monitoring equipment to collect assessment data	29 (29.0)
I only have time to use physical assessment when a patient deteriorates.	18 (18.0)
Physical assessment is the responsibility of medical or allied health staff	49 (49.0)
I don't use physical assessment skills because of the task-oriented nature of my work.	31 (31.0)
2. Lack of time and interruptions	
Lack of time is a barrier to using physical assessment skills	56 (56.0)
I usually don't have time to do an in-depth physical assessment of my patients.	51 (51.0)
I don't have time to use physical assessment skills because of my workload.	44 (44.0)
Completing checklists and documentation means I don't have time to use physical assessment skills.	32 (32.0)
Too many interruptions during my work prevent me from doing physical assessment.	50 (50.0)
The physical environment (e.g. lighting, noise, privacy) of the ward makes it difficult to do physical assessments.	56 (56.0)
3. Ward culture	
The ward culture is a barrier to my use of physical assessment skills.	34 (34.0)
Assessment is done a certain way in my ward, which limits the extent of physical assessment skills I use.	35 (35.0)
Assessments I make using physical assessment skills are not valued by my coworkers	27 (27.0)
The ward culture discourages nurses from doing physical assessment in my workplace	43 (43.0)
I feel supported by my colleagues to use physical assessment skills.	46 (46.0)
Other nurses don't want to listen when I report my physical assessment findings.	38 (38.0)
4. Lack of confidence	
I lack confidence in accurately performing physical assessment skills.	26 (26.0)
I worry about my ability to correctly use physical assessment skills.	40 (40.0)
I lack confidence in deciding what physical assessment skills to use.	30 (30.0)
I am sure that I can competently use physical assessment skills.	42 (42.0)
5. Lack of nursing role models	
Physical assessment skills are role-modelled by experienced nurses in my ward.	59 (59.0)
Nurse leaders promote the use of physical assessment skills in my unit.	49 (49.0)
Nurses encourage one another to use physical assessment skills on my ward.	53 (53.0)
There is a lack of experienced nursing staff to role model physical assessment skills on my ward.	53 (53.0)
6. Lack of influence on patient care	
Information I collect using physical assessment skills is used to develop a plan of care.	50 (50.0)
My ability to use physical assessment skills makes a positive difference to patient care.	62 (62.0)
My ability to use physical assessment skills improves the quality of nursing care.	69 (69.0)
The information I collect using physical assessment skills is used to make treatment decisions.	51 (51.0)
7. Specialty area	
I only use physical assessment skills that are relevant to my specialty area.	48 (48.0)
I don't use physical assessment skills that are outside of my specialty area.	50 (50.0)
The specialty area I work in determines the physical assessment skills I use.	48 (48.0)
The physical assessment skills I use are restricted to my specialty area.	59 (59.0)
The physical assessment skills I use are determined by what is acceptable on my ward.	60 (60.0)

**"Strongly agree" or "agree" responses described the physical assessment skills barriers during clinical training

This table shows that half or more than half of the nursing students indicated that lack of time, too many interruptions during work, physical environment (such as lighting, noise, privacy), lack of physical assessment skills model by experienced nurses, lack of reinforcement and encouragement of nurses to each other to use physical assessment skills, lack of experienced nursing staff to role model physical assessment skills, all make it difficult to do physical assessments.

Furthermore, the collected information using physical assessment skills to develop a plan of care and the ability to use physical assessment skills to make a positive difference in patient care and improve the quality of nursing care to make treatment decisions also, statements such as "using only the physical assessment skills that relevant to the field of specialization and use them according to what is acceptable in the ward" were also barriers in performing physical assessment skills during the hospital clinical training.

Table 3: Differences in the barriers of physical assessment between genders (n=100)

Subscale	Mean		t	p-value
	Male	Female		
Reliance on others and technology	2.61	2.62	-0.09	0.92
Lack of time and interruptions	3.06	3.50	-2.86	0.01*
Ward culture	2.79	3.15	-2.33	0.02*
Lack of confidence	2.55	3.21	-4.28	0.00*
Lack of nursing role models	3.10	3.54	-2.62	0.01*
Lack of influence on patient care	3.34	3.61	-1.50	0.14
Specialty area	3.17	3.56	-2.41	0.02*

*Significant at P<0.05

This table indicates that female nursing students have greater barriers to performing physical assessment skills in terms of lack of time and interruptions, ward culture, lack of confidence, lack of nursing models, and specialty areas.

Table 4: Differences in the barriers of physical assessment according to the stage (*n*=100)

Subscale	Mean			F	p-value
	Second Stage	Third Stage	Fourth Stage		
Reliance on others and technology	2.47	2.69	2.69	1.42	0.25
Lack of time and interruptions	3.28	3.12	3.38	0.87	0.42
Ward culture	2.91	2.72	3.26	4.27	0.02*
Lack of confidence	2.65	2.85	3.06	2.04	0.14
Lack of nursing role models	3.23	3.14	3.57	2.38	0.10
Lack of influence on patient care	3.39	3.29	3.73	2.17	0.12
Specialty area	3.27	3.20	3.59	2.12	0.13

*Significant at P<0.05

This table shows that the ward culture is considered a barrier to fourth-stage nursing students to perform physical assessment skills, while there is no effect of remaining subscales to perform physical assessment skills.

Discussion

Physical Assessment is essential in identifying the actual and potential patient problems and evaluating patient response to care. Previous studies on the use of physical assessment in a clinical setting found that there are skills sometimes used, and some rarely or never used in the practice which reveals evidence of a practice gap. Improper patient assessment raised concern about the actual nursing practice which fails to recognize patient deterioration [9].

Furthermore, in a complex clinical practice setting, new graduate nurses must be equipped with the right core skills to promote optimal patient care. One of the nursing skills taught at universities is physical assessment, a key element in nursing education, and clinical practice. For the past decade, physical assessment has been an integral part of the nursing field. However, emergent evidence has demonstrated problems among nursing students in effectively performing their clinical skills, which has resulted in difficulty in evaluating their clinical learning (10).

The study results show that half or more than half of the nursing students indicated that lack of time and interruptions, lack of confidence, lack of nursing role models, lack of influence on patient care, and the specialty area, all are considered barriers to performing physical assessment skills during hospital clinical training.

Regarding lack of time and too many interruptions during work, Birks *et al*., (2013) [8] who studied " The use of physical assessment skills by registered nurses in Australia: Issues for nursing education" explained that time is a key factor that determines not only the type of physical assessment skills practiced by nurses, but also the depth of assessment they complete. For example, in a busy ward or department, a nurse may not have the time to perform a thorough respiratory assessment and may only complete an inspection of factors such as a patient's respiratory rate, depth, effort, and accessory muscle use. The nurse may omit palpation, percussion, and auscultation knowing that the medical team will also be conducting a respiratory assessment as part of their role [8]. According to Colligan & Bass, (2012) [11] who studied "Interruption handling strategies during pediatric medication administration," they show that there are high numbers of interruptions in many hospital settings and such interruptions may lead to human error. Interruptions have cognitive costs in diverting attention and forgetfulness leading to omissions. Models of interruption have typically focused on task-switching when the primary task is suspended to attend to a secondary (interrupting) task [11]. Another study reported that one staff nurse was interrupted more than 20 times during the 8-hour shift [7]. Moreover, the current study shows that the physical environment (such as lighting, noise, and privacy) also plays a role in implementing physical assessment skills. Regarding this result, Monteiro *et al*., (2020) [12] who studied "Interruptions of nursing activities: contributions to patient and professional safety" explained that most errors in healthcare are associated with system failures (e.g., complexity, number of procedures, unpredictability, infrastructure, and management) or intervenient conditions beyond the control of the individual. Also, they explained that the promotion of a suitable environment for nurses to practice can increase their cognitive capability to promote appropriate and safe care to patients and families. The identification of environmental factors that result in nursing practice breakdown can improve the quality of nursing care. One of these factors is the interruption of activities performed by the nurse, which can limit their ability to promote patient safety [12].

Furthermore, the study findings indicate the lack of physical assessment skills modeled by experienced nurses, lack of reinforcement and encouragement of nurses to each other to use physical assessment skills, and lack of experienced nursing staff to role model physical assessment skills, all make it difficult to do physical assessments. This result was supported by Byermoen *et al*., (2022) [13] who studied "Nursing students' development of using physical assessment in clinical rotation—a stimulated recall study", where they pointed out that providing a safe learning environment involves interprofessional collaboration, in which the physical assessment skills can be used whenever relevant. Moreover, a collaborative climate stimulates the students' motivation and persistence to continue practicing physical assessment skills. In contrast, when the students did not perceive a safe learning environment, they would avoid performing specific physical assessment skills. This aligns with findings from other studies reporting that the lack of nursing students' skills performance is related to the absence of role models and real opportunities to develop and practice skills [13].

Furthermore, nursing students in this study stated that they could not use the collected information using physical assessment skills to develop a plan of care and the ability to use physical assessment skills to make a positive difference in patient care and improve the quality of nursing care to

make treatment decisions. According to Abdalla Elbiaa, (2022) [14] who studied " perceived barriers among undergraduate nursing students toward performing physical assessment of critical care patients" state that the inability to use assessment data to develop a nursing care plan and use assessment skills to enhance the quality of nursing care may be explained by students' lack of self-confidence to make the decision to use physical assessment skills and worry about performing it correctly; unable to put their physical examination abilities into practice due to the predominant culture in clinical settings; and impotent to apply physical examination abilities due to a lack of time and distractions [14].

In addition, the current study shows that statements such as "using only the physical assessment skills that are relevant to the field of specialization and use them according to what is acceptable in the ward" were also barriers to performing physical assessment skills during the hospital clinical training. This result is supported by Gonçalves *et al*., (2023) [15] who studied " barriers to nurses performing physical assessments in rehabilitation care units: An observational study" and explained that one of the predominant perceived barriers to performing physical assessments is 'specialty area' where that mental health nurses for example used physical assessment techniques less than half as often as those in surgical units [15].

Regarding the differences in the barriers of physical assessment between genders, the current study indicates that female nursing students have greater barriers to performing physical assessment skills in terms of lack of time and interruptions, ward culture, lack of confidence, lack of nursing models, and specialty areas. This may be because that many traditional societies, including parts of Iraq, there may be cultural norms that restrict female interactions with male patients or limit their ability to perform certain procedures. This can create barriers for female nursing students in gaining practical experience with physical assessment skills, especially if these skills involve intimate or sensitive examinations.

Finally, the barriers of physical assessment according to the stage, the present study showed that the ward culture is considered a barrier to fourth-stage nursing students to perform physical assessment skills. This may be because fourth-stage nursing students while nearing the completion of their training, may still be perceived as less experienced or less capable compared to fully qualified nurses. This hierarchical culture can lead to stringent supervision requirements that limit students' autonomy in performing physical assessments. Students may find themselves under constant oversight, which can hinder their ability to fully engage in and develop their assessment skills independently.

Conclusion

The current study indicates that a large number of nursing students face many obstacles in applying physical assessment skills during clinical training in the hospital, including lack of time and interruptions, lack of nursing models, and lack of influence on patient care, as well as the field of specialization. Knowing and understanding the obstacles that nursing students face in implementing physical assessment skills may help in providing appropriate solutions that contribute to improving and raising the level of students' skills in providing good, high-quality health care to patients.

Recommendation

- Physical examination qualities should be emphasized in nursing courses, and institutions should offer students opportunities to practice those skills in clinical settings.
- E-learning is often considered a supplement to traditional didactic teaching or as part of a blended learning program
- Increasing time training can play a significant role in improving physical assessment skills.
- Working within student groups and sharing information among them can save more time.
- Increasing the number of visits to training places helps students increase their experience and adapt to the field of specialization.

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Conflict of Interest: None to declare.

Ethical Clearance: All study protocols were approved under the University Of Kufa-Faculty of Nursing under approved guidelines.

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