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Physical Assessment Skills (PAS) in Nursing Courses: Are we Teaching the Right Things?

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ABSTRACT

Physical assessment skills (PAS) are a fundamental skill in caring for patients. Nurses must be able to recognize a change in a patient's condition and timely intervene to prevent negative patient outcomes. Nursing students are taught numerous skills which they often do not get an opportunity to practice while in the clinical setting. Registered nurses indicate new graduate nurses find it difficult to transition from learning physical assessment in nursing school, to deciding what and how to assess patients when they are in the clinical setting.

A quantitative cross-sectional study was conducted at a Nursing School in Georgia, USA. The Barriers for Nurses to use Physical Examination Skills, a validated scale was administered between Spring 2020 and Fall 2021. This scale focuses on reasons why student nurses say they do not practice the skills they have been taught while in nursing school. Eighty-four (n=84) questionnaires were received [1].

Physical assessment skills taught during class but never practiced include testing visual acuity (Snellen) chart.

Results indicated 57% of the students did not feel confident in knowing what physical assessment skills were indicated, and whether they could do it correctly.

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Nurses must have superior physical assessment skills (PAS). Identifying a change in the patient's condition, and timely intervention can make a difference between life and death. express the concern that physical assessment courses do not prepare the nurse to identify patients deteriorating [1]. Morrell et al. found during a scoping review of literature on PAS a lack of consensus on what PAS to include in the undergraduate nursing curriculum [2].

PAS is taught during the first semester of nursing school. The assumption is for students to strengthen and apply the assessment skills taught during their first semester in subsequent semesters and different courses. While spending an average of 90 hours on theoretical and laboratory teaching, students say they do not get the opportunity to practice the skills while in clinical practice. In one study, 77% of newly graduated nurses said they will not know "where to begin" a patient's assessment [3]. Registered nurses report new graduate nurses cannot do a relevant patient assessment. Hospital management expresses concern about new graduate nurses not being able to identify a change in a patient's condition before it is too late [4]. Anderson et al., state "…new graduate nurses experience difficulty transitioning the traditional head to toe physical assessment into real-world nursing practice" [5].

Concerns about a lack of knowledge, self-confidence, and readiness to perform physical assessments, identifying cues of a patient's condition deteriorating, and being able to prioritize actions, are of international concern [6].

Research in Australia, Norway, China, and the Arab countries has been extensive, most based on the work of Douglas et al., on PAS for registered nurses, and the barriers why student nurses report they do not get the opportunity to practice their skills. Norway, China, and the Arab countries published numerous studies on preparing the student nurse for their role in assessing the patient. At the time of the Institutional Review Board (IRB) submission, limited studies in the USA were identified, with none of the studies done in Georgia Nursing Schools [7].

Selection of physical assessment skills

Some researchers emphasize the biggest problem is over-teaching, with some curriculums teaching, and expecting competence in about 126 skills, while only 30 skills are said to be used by nurses in practice mention in studying syllabi in physical assessment while 23 skills are taught in 50% of Australian Nursing Schools, 99 and more skills are taught in 50% of USA Nursing Schools [1-3]. Most of the research conducted in the field of finding evidence-based physical assessment skills refers to the research of who mentioned the 30 skills needed for quality physical assessment by nurses [1]. Rather than focusing on content in a textbook, nursing educators should select skills that have the most significance on patient outcomes [8]. However, very few, if any changes occur in the selection of content for physical assessment courses in nursing. If any change did occur, it was adding content, and/or changes such as adding simulation, videos, and e-learning, while the content overloads stayed the same. Douglas et al., refer to physical assessment courses as being one of the "sacred cows" in Nursing Education [3].

Nurse educators agree there is over-teaching, and time is spent on unnecessary skills acquisition. However, semester after semester they will continue presenting the same content and teaching the same skills. Whether it is keeping what feels comfortable, because they have been taught that way, and been teaching it like this for many years, and do not see the need to change. During informal discussions, nurse educators expressed concerns about removing some content from the course. Most nursing schools have students taking high-stake exams in all courses at the college level, where questions are included on these skills. The grades on these high-stake exams are factored into the students' final grades, and thus, if the content is not taught, it may negatively impact a student's performance during college.

Health assessment syllabi have not changed significantly in the past 15 years (as textbooks often remain unchanged, although newer, more applicable textbooks have been published). Kinyon et al. changed their health assessment curriculum significantly. Rather than learning a new skill every week, they were practicing fewer skills more often. Students reported they felt more confident and nursing instructors reported students could use their clinical judgment in interpreting the findings, prioritize assessment findings and suggest nursing priorities [3].

Egilsdottir et al. selected 30 skills pertaining to the heart and peripheral circulatory system (11 skills), the respiratory system (7 skills), the abdominal system (6 skills), and the neurological system (6 skills) and implemented these as part of the curriculum in a Norwegian University [9]. Irrespective of limiting the skills taught, students still reported a disconnect between what is taught in the classroom and practiced in the clinical setting. It is noteworthy that skills identified by Anderson et al.,as non-essential skills, are still taught and practiced in most physical assessment courses. These skills include testing specific cranial nerve functions and memorizing the names of different tests. These tests are not within a newly registered nurse's scope of practice and often require sophisticated knowledge and practice [5].

Consistent findings during a literature search indicated general agreement on the skills most often used by registered nurses in practice. Morrell et al., urge nursing educators to involve registered nurses in the clinical practice, and adapt their syllabi based on real practice, and not because it is in a textbook [2].

Teaching methodology

Most courses in the physical assessment consist of a didactic part (teach in the class through lectures), followed by a demonstration in the laboratory, practice, and then a check-off. Teaching is focused on the technique, normal findings, and abnormal findings, but only on how it relates to the body system under discussion. Danielson et al., did a systematic review of how physical assessment is taught to medical students [10]. They found it is either taught in a head-to-toe manner or body system based. They did not find any evidence comparing whether the head-to-toe approach is more effective compared to the body system approach.

Whichever method is used to teach students, they tend to learn and practice skills in isolation and lack the critical judgment skills to recognize cues, prioritize problems and intervene timely. Kinyon et al., describe a model where a health assessment post-conference was added when students would discuss case studies and suggest treatment. This model allows students to identify the "why" of the assessment and can see how their timely interventions can make a difference [3].

In most courses, students do their physical assessment on a peer, while some schools use standardized patients for the final check-off during which students need to demonstrate competency. Students find the use of standardized patients as being a more realistic scenario compared to peer-to-peer assessment in a study conducted by Slater et al. While most nursing educators would likely prefer the use of standardized patients, financial constraints usually limit the use of standardized patients. Some nurse educators expect students to watch videos before the practice session and then would randomly assign a student to demonstrate a skill before everyone starts practicing [11].

More novel approaches to teaching physical examination are described in the literature. Patiwael et al., describe a collaborative testing approach in teaching PAS to a group of medical students and compared it with the traditional approach where the individual student must demonstrate competency [12]. Most students preferred the collaborative testing approach as they felt more involved in the activity. Fernandes et al., describe using clinical simulation to teach cardiovascular physical assessment [13]. Using clinical simulation enabled students to recognize cues, connect the dots, and have a more authentic experience compared to the traditional peer-to-peer physical assessment. Tuzer et al., compared the use of high-fidelity simulation and standardized patients in teaching cardiovascular and respiratory assessment [14]. Their study did not show significant differences between teaching physical assessment with simulation versus standardized patients.

Hsu et al., describe the use of a smartphone application used to teach nursing students physical assessment skills. A group of students would watch a video, answer some questions, and then the group had to make a video performing the physical assessment skill (while having the smartphone application available). Students felt the new way of learning PAS was exciting, and the case scenarios reflected a real-life situation [15].

Barriers to practicing physical assessment skills

The study by Byermoen et al., of the third-year nursing students found students felt they did not get the opportunity to practice at the unit level [9]. Egilsdottir et al., in saying role-modeling, preceptor guidance, and the opportunity to practice the skills they have learned, determine how successful and confident new graduate nurses perceive their physical assessment skills [16]. confirmed what other researchers found of being important factors in students' self-perceived level of competence in physical assessment. Students reported lack of time as the most important factor (the preceptor did not have the time to check and see if they were doing it right, and they were scared to do it alone). Further, the ward culture was not always conducive to learning, as the registered nurse had a high patient care load, and thus did not have time to spend on physical assessment and teach the student.

Methods

A quantitative, cross-sectional survey was conducted at a university in Georgia to identify the students' perceptions on whether they were practicing the skills during a clinical placement, and if not, what contributed to not being able to practice the skills in the health care setting. The study was approved by the Institutional Review Board (IRB).

Purpose

The primary purpose of the study was to identify which PAS is taught in class, and do students practice while in the clinical setting. The researcher further wanted to identify potential reasons why student nurses do not practice these skills while in the clinical setting.

Population and sampling

All students, 18 years and older at the time of participating in the study, were invited to participate in the study. Inclusion criteria were prior completion of the PAS course and active placement in a clinical setting during the time of participation in the research. This invitation was initially sent out during Spring and Fall 2020 and then expanded to Spring and Fall 2021 due to the interruption in clinical practice during the Covid-19 pandemic. Participation was voluntary and they could stop participation at any time. A total of 84 questionnaires, representing 28% of the population were received back. The low response rate was likely due to the Covid-19 pandemic as many of the students at the time were not allowed to continue with clinical practicum.

Tools

Permission was granted by Douglas et al., to use their Barriers to Nurses' use of Physical Assessment Scale and adapt it for use in the research setting. This tool was selected due to its being used in various international studies. This tool has 38 items within seven (7) subscales: reliance on others and technology, lack of time and interruptions, ward culture, lack of confidence, lack of nursing role models, and lack of influence on patient care and specialty area. To increase validity, some questions are duplicated and asked in a negative format. This allows the researcher to eliminate questionnaires where respondents complete the questionnaire without reading the actual question.

A question was added to identify how often the student practiced specified skills. These skills were identified based on what historically has been included in the PAS course in the research setting. Another question was asked to identify the student's cohort at the time of completing the questionnaire. The researcher thought cohort could be an important variable in how often students practice a skill and how supportive the work environment was the questionnaire was developed in Qualtrics and distributed to the students via an anonymous link.

Results

Respectively junior 2 (n=12), senior 1 (n=23) and senior 2 (n=49) students answered the questions. There were no significant differences in biographical data, including whether the student had experience in a health care setting outside nursing school. No correlation was found between the cohort and any of the questions. The results are thus presented for the total sample (n=84).

Physical assessment skills

Respondents were asked to rate how often they have been using physical assessment skills. All the skills listed, are discussed in depth in the required textbook and adaptive quizzing for the course. Table 1 indicates the percentage of students indicating they often practiced these skills (at least 3/5 times) while in the clinical setting. Table 2 indicates the percentage of students indicating they never practiced this skill in the clinical setting.

Table 1: Physical Assessment Skills often practiced in the clinical setting (n=84)

PAS	Percentage
Auscultating heart sounds	100%
Skin assessment (for pressure injuries)	100%
Auscultating lung sounds	97.6%
Auscultating bowel sounds	97.6%
Assess pedal pulses	95.2%
Perform fall risk assessment	91.7%
Auscultate apex pulse	86.9%
Testing muscle strength	85.7%
Palpating the abdomen	86.9%
PERRLA (pupils equal, round, react on light, accommodate)	79.7%
Testing ROM (Range of Motion)	78.8%
Inspecting tongue	70.2%
Inspect tonsils with penlight/flashlight	69.1%
Palpating full bladder	64.3%
Inspecting conjunctiva	30.9%

Table 2: Physical Assessment Skills never practiced in the clinical setting (n=84)

PAS	Percentage
Snellen chart (visual acuity test)	100%
Percussion of abdomen	100%
Percussion for costo-vertebral tenderness	100%
Spinal curvature assessment	100%
Test for carpal tunnel syndrome	100%
Using vibration fork (Rhine/Weber/Position Sense testing)	100%
Reflexes (abdominal superficial reflex)	100%
Deep tendon reflexes (except patellar reflex)	100%
Inspect nasal cavity with nasal speculum or any light source	100%
Assess hearing (Whisper Test)	100%
Do anthropometric measurements (hip-waist ratio)	100%
Do mental health assessment (testing memory, judgment, abstract thinking)	99.1%
Using an otoscope	99.1%
Testing vision nearby	97.6%
Palpating sinuses	90.5%
Testing cranial nerves	87.2%
Assessing femoral pulse	79.8%
Palpate lymph nodes (neck and face)	50%

Reliance on others and technology

While 43.6% of the respondents said they were doing physical assessments based on checklists in the electronic health record (ER), only 28.3% said they depend on the technology to provide information on the patients' condition. When asking nurses which assessment skill they mostly use, all nurses refer to vital signs. However, Morrell et al., mention while monitoring vital signs is likely the most important physical assessment skill, it is often not included when referring to essential skills [20].

Lack of time and interruptions

Only 32.2% of respondents considered a lack of time for doing physical assessments. However, 50.9% of the respondents indicated interruptions, such as patients having other needs, as an important reason why they could not do a physical assessment on a patient.

Ward culture

Ward culture refers to how important physical assessments are for the nursing staff in the unit and whether the students' findings are considered as being valid, and whether findings not within normal parameters are noted and acted on. The percentage of respondents seeing ward culture as promoting doing physical assessments was 77.4%.

Lack of confidence

When respondents were asked how confident they were in doing a physical assessment in clinical practice, 41.5% of the respondents were not sure if they would know which assessments would be needed, and 58.5% were unsure if they were doing the skills in a correct manner.

Nursing role models

Most of the students (99.2%) indicated the registered nurses were too busy to watch them perform a full physical assessment. They mentioned if the clinical instructor was present, they did get the opportunity to do a physical assessment. This study's findings are consistent with studies conducted in different countries. Korkmaz Dogdu et al., report students say they learn numerous skills in class, but never practiced them, and often registered nurses acknowledge they don't know the test (or equipment) as it is never used [18].

Limitations

The questionnaire was completed anonymously. Regular email reminders were sent but it did not improve participation. The researcher was postulating the students' cohort at the time of completion could make a difference. The question was whether students in a Maternal-Child course at the time of completion of the questionnaire would have different perceptions of using their skills, compared with a student in a Mental health course, or an Adult Course. The response rate was skewed in terms of the cohort, and thus it was not possible to examine the effect of the cohort and exposure to specialty areas on their response rate.

A small sample size limits the generalizability of the findings and inferential statistics (due to a lack of assuming normal distribution). However, this research study provides a 'bird's eye view' of the current situation in one nursing school during the time of Covid-19. done in other countries, and before the Covid-19 pandemic.

Conclusion

While realizing there is no evidence-based information on which skills to include in a physical assessment course, this research confirms findings from other studies on which physical skills are important for practice. We cannot ignore findings from the last 15 years, indicating we are teaching PAS that is not used, nor practiced in the real nursing world. There is an urgent need to decrease the quantity of PAS taught while providing more opportunities for practice, both in the laboratory and in the clinical setting. By decreasing the number of skills, and the content, time can be spent more efficiently in helping students to recognize important cues indicating a patient's condition is changing [19,20].

Research should focus on the informed opinions of registered nurses in clinical practice to guide the PAS syllabus, rather than textbooks and test banks, which do not reflect the need in preparing nurses who can be responsive when a patient's condition deteriorates. While reviewing which method is more effective to teach PAS needs to continue to promote evidence-based teaching practices, it is of most importance to bridge the gap between what is taught in Nursing School and what is practiced in the health care setting.

References

1. Douglas C, Windsor C, Lewis P (2015) Too much knowledge for a nurse? Use of physical assessment by final-semester nursing students. Nursing & Health Sciences 17: 492-499.
2. Morrell S, Giannotti N, Pittman G, Mulcaster A (2021) Physical assessment skills taught in nursing curricula: A scoping review. JBI Evidence Synthesis 19: 2929-2957.
3. Kinyon K, D Alton S, Poston K, Navarrete S (2021) Improving physical assessment and clinical judgment skills without increasing content in a Prelicensure nursing health assessment course. Nursing Reports 11: 600-607.
4. Maniago JD, Feliciano EE, Santos AM, Agunod CL, Adolfo CS, et al. (2020) Barriers in performing physical assessment among nursing students: An integrative review. International Journal of Nursing Sciences 8: 120-129.
5. Anderson B, Nix E, Norman B, McPike HD (2014) An evidence based approach to undergraduate physical assessment practicum course development. Nurse Education in Practice 14: 242-246.
6. Gülnar E, Bıyık Bayram Ş, Özveren H (2022) Barriers to physical assessment skills in nurses and nursing students: A comparative-descriptive cross-sectional study. Journal of Human Sciences 19: 46-55.
7. Douglas C, Osborne S, Reid C, Batch M, Hollingdrake O, et al. (2014) What factors influence nurses' assessment practices? Development of the barriers to nurses' use of physical assessment scale. Journal of Advanced Nursing 70:2683-2694.
8. Kohtz C, Brown SC, Williams R, O'Connor PA (2017) Physical assessment techniques in nursing education: A replicated study. Journal of Nursing Education 56: 287-291.
9. Byermoen KR, Eide T, Egilsdottir H, Eide H, Heyn LG, et al. (2022) Nursing students' development of using physical assessment in clinical rotation-a stimulated recall study 21: 110.
10. Danielson AR, Venugopal S, Mefford JM, Clarke SO (2019) How do novices learn physical examination skills? A systematic review of the literature. Medical Education Online 24: 1608142.
11. Slater LZ, Bryant KD, Ng V (2016) Nursing student perceptions of standardized patient use in health assessment. Clinical Simulation in Nursing 12: 368-376.
12. Patiwael JA, Douma AH, Bezakova N, Kusurkar RA, Daelmans HE (2021) Collaborative testing in physical

examination skills training and the autonomous motivation of students: A qualitative study. BMC Medical Education 21: 224.

13. Fernandes RM, Carino AC, Fernandes MI, Tinôco JD, Ribeiro HC, et al. (2020) Teaching cardiovascular physical examination in nursing: Clinical simulation. Revista Brasileira de Enfermagem https://doi.org/10.1590/0034-7167-2019-0530.
14. Tuzer H, Dinc L, Elcin M (2016) The effects of using high-fidelity simulators and standardized patients on the thorax, lung, and cardiac examination skills of undergraduate nursing students. Nurse Education Today 45: 120-125.
15. Hsu L, Hsiang H, Tseng Y, Huang S, Hsieh S, et al. (2019) Nursing students' experiences of using a smart phone application for a physical assessment course: A qualitative study. Japan Journal of Nursing Science, 16: 115-124.
16. Egilsdottir HÖ, Byermoen KR, Moen A, Eide H (2019) Revitalizing physical assessment in undergraduate nursing education - what skills are important to learn, and how are these skills applied during clinical rotation? A cohort study. BMC Nursing 18: 41.
17. Korkmaz Dogdu A, Arikan F, Kol E (2021) Physical examination skills used by nursing students and determination the barriers encountered in the use of these skills. Journal of Education and Research in Nursing 18: 335-340.
18. Ahmad Kutah, O (2021) Physical assessment techniques performed by Jordanian registered nurses (RNs): Survey study. American Journal of Nursing Science, 10: 41-48.
19. Liyew B, Tilahun AD, Kassew T (2021) Practices and barriers towards physical assessment among nurses working in intensive care units: Multicenter cross-sectional study. BioMed Research International 14: 5524676.
20. Morrell S, Pittman G, Giannotti N, Mowbray F (2021) Physical assessment skills used by registered nurses. Quality Advancement in Nursing Education-Advanced in Nursing Education https://doi.org/10.17483/2368-6669.1286.