

Full Length Research Paper

Evaluation of the relationship between nursing students' confidence to perform a skill and their perceived effectiveness of the instruction that they received

*Rashid Bin Mohammed, Lubna Quasimi and Maktoum Al Nahyan

Department of Nursing Science, Faculty of Medicine, Sultan Qaboos University, Muscat, Oman.
E-mail: rashid.bin60@hotmail.com

Accepted 12 July, 2015

A descriptive research design was employed to determine the physical assessment self-efficacy of 73 BS Nursing students of Omar Al-Mukhtar University (Libya) following a nine-day training on cephalocaudal examination using a self-assessment tool that was constructed by the authors (Cronbach's $\alpha = 0.972$). Simultaneously, the perception of these nursing students on the effectiveness of physical assessment clinical instruction was evaluated using a tool based on Keller's ARCS Model of Motivational Design (Cronbach's $\alpha = 0.852$). This research was conducted to evaluate a possible relationship between the student's confidence to perform a skill essential to their future professional practice and their perceived effectiveness of the instruction that they received from the nursing faculty. It was determined that students had a high level of self-efficacy in performing physical assessment following the training. They similarly perceived the instruction as highly effective. However, no statistical evidence was found to establish that the students' level of self-efficacy was directly related to the effectiveness of instruction.

Keywords: Self-efficacy, qualities of clinical instructor, physical assessment, nursing process, clinical instruction and nursing education.

Abbreviations

PA-Physical Assessment, IEN - Intensive and Emergency Nursing, MNN - Midwifery and Neonatal Nursing, PHN - Public Health Nursing, OTAN - Operating Theater and Anesthesia Nursing.

INTRODUCTION

Assessment is the process of collecting, validating, and clustering data. It is the first and most important step in the nursing process (Dillon, 2007). Physical examination is a process during which nurses use their senses to collect objective data. In order to determine a client's care needs, assessment is a crucial first step. If a client's normal routines, patterns and behaviors are not explored and compared with their current health care status and abilities, significant aspects of care need may be omitted or care may be provided that the client does not require. In doing so, there is a risk of jeopardizing their independ-

ence and losing their trust and confidence (Hilton, 2004).

The goal of physical assessment is not only to identify actual or potential health problems but also to discover patient's strengths. Data from the physical assessment can be used to validate the health history. For example, a nurse can use the physical examination results to assess clues or findings obtained from the history. Combined with the history data, physical assessment findings are essential in formulating nursing diagnoses and developing a plan of care for your patient (Dillon, 2007).

Physicians and nurses employ similar techniques in physical assessment. However, while doctors perform this to diagnose and treat illness, nurses do physical assessment to diagnose and treat the patient's response to a health problem in an effort to promote her or his health and well-being (Doenges and Geisler-Murr, 2002).

During information gathering, the nurse exercises perceptual and observational skills, assessing the patient through the senses of sight, hearing, touch, and smell.

The duration and depth of any physical assessment depend on the current condition of the patient and the urgency of the situation, but it usually includes inspection, palpation, percussion, and auscultation.

The demands placed on newly qualified nurses by increasingly complex health systems, together with the explosion of knowledge and use of increasing technology, reinforce the need for skilled new graduates (Halfer and Graf, 2006).

Clinical competence is highly affected by the quality of instruction received by the student. Nursing students require clinical skills that include cognitive, technical and non-technical skills as these are required to render patient care (NHS Education for Scotland, 2007). However, it was been reported by Beyea et al (2007) that new nursing graduates' readiness for clinical practice does not meet the requirements of the work environment, and that educational programs do not adequately prepare new graduates for the real clinical setting. Several strategies have been employed by nursing schools to enhance student learning ranging from didactics to the use of simulators. Tawalbeh and Tubaishat (2014) have reported that although traditional training involving PowerPoint presentation and demonstration on a static manikin is an effective teaching strategy, simulation is significantly more effective than traditional training in helping to improve nursing students' knowledge acquisition, knowledge retention, and confidence about advanced cardiac life support (ACLS).

One of the tenets of Albert Bandura's Cognitive Learning Theory is that people learn by observing others. Bandura (1997) states that beliefs of collective powerlessness can create psychological barriers more debilitating than external impediments. This highlights the importance of nurse teachers in promoting the concept of self-empowerment on students, emphasizing the fact that they can acquire the skills and knowledge to enable them to critically analyze long-established practices, evaluate their effectiveness and, constructively, be instruments in disseminating the findings (Bahn, 2000).

According to Albert Bandura (1994), self-efficacy is "the belief in one's capabilities to organize and execute the courses of action required to manage prospective situations." Self-efficacy is a person's belief in his or her ability to succeed in a particular situation. Bandura described these beliefs as determinants of how people think, behave, and feel (1994).

Researchers have established that self-efficacy, behavior changes and outcomes are highly correlated. Self-efficacy is an excellent predictor of behavior, especially in psychology and education (Graham and Weiner, 1996). The advantages of greater self-efficacy include higher motivation in the face of obstacles and better chances of persisting over time outside a situation of formal supervision.

There are four sources of self-efficacy: the person's

own mastery experience, social persuasions, somatic and emotional states, and vicarious experience of observing others perform tasks (Fitton, 2011),

The College of Nursing conducted a 9-day training on physical assessment for students employing demonstration and return-demonstration method. Students were divided into small groups consisting of 5 members supervised by a single clinical instructor to ensure that individual needs of students are attended. According to Croxon and Maginnis (2009) the strategy of more focused clinical instruction is also preferred by students. The perception of the students on the effectiveness of the clinical instruction on physical assessment was determined using John Keller's Model for Motivational Design. The ARCS model is a problem solving approach to designing the motivational aspects of learning environments to stimulate and sustain students' motivation to learn (Keller, 1983, 1984, 1987). ARCS refers to the four components of motivation in this model, namely Attention, Relevance, Confidence and Satisfaction

This research was conducted to determine a possible link between the nursing students' confidence to perform physical assessment on actual patients and how they perceived the quality of instruction that they received in conducting physical assessment.

METHODS

This research utilized a descriptive non-experimental design. Convenience sampling was conducted among the third and fourth year students of the College of Nursing who participated in the 9-day training course on Adult Physical Assessment. The student respondents were asked to rate their self-efficacy on 14 components of Adult Physical Assessment: general appearance, skin, nail, hair, skull and face, eyes, ears, nose and sinuses, mouth and oropharynx, neck, thorax and lungs, heart and peripheral pulses, breast and axilla, abdomen, and musculoskeletal system. The questionnaire consisted of 79 physical assessment steps based on the Physical Assessment tool utilized during the lecture-demonstration and return demonstration for the students. Their perception on the effectiveness of clinical instruction on Physical Assessment was determined using a researcher-prepared questionnaire based on Keller's ARCS Model. This research tool has been previously subjected to content validation and reliability testing (Cronbach's $\alpha = 0.852$). The questionnaire was bilingual (English and Arabic) to ensure that the respondents understood each question item. Participants were required to provide information on their year level and areas of specialization since nursing students in this university are divided into four areas of specialization beginning on their junior year. The students' ranks were based on their Grade Point Average (GPA) obtained from

Table 1. Level of Self-Efficacy of Nursing Students on Physical Assessment

Physical Assessment Area	Mean	Standard Deviation	Adjectival Rating
General Appearance	7.89	2.31	High
Skin	8.77	2.00	Very High
Nail	8.23	2.29	Very High
Hair, skull, and face	8.29	2.10	Very High
Eyes	7.48	2.09	High
Ear	8.31	2.28	Very High
Nose and Sinuses	7.80	2.44	High
Mouth and oropharynx	8.06	2.43	Very High
Neck	8.05	2.46	Very High
Thorax and Lungs	7.39	2.48	High
Heart and peripheral pulses	7.34	2.72	High
Breast and axilla	8.52	2.23	Very High
Abdomen	8.48	2.18	Very High
Muscle, bones and joints	8.32	2.26	Very High
Over-all Level of Efficacy	7.96	1.93	High

Very low = 0.0 -2.00; Low =2.01-5.00; High 5.01 - 8.00; Very High = 8.01 - 10.0

the records of the College Registrar. Their perception on the quality of instruction was obtained using a questionnaire based on John Keller's ARCS Model of Motivational Design. The respondent students assessed the instruction they received using a four-point Likert Scale on questions pertaining to attention, relevance, confidence and satisfaction. Collected data were tallied and subsequently subjected to statistical treatment using the *Statistical Package for Social Sciences Version 16.0 (SPSS)* employing Pearson correlation for the relationship between the students' self-efficacy on physical assessment and their perception on the effectiveness of physical assessment clinical instruction.

RESULTS

Profile of the Respondents. Forty four (60 %) of the 73 respondents were 3rd year students while twenty nine (40 %) belonged to 4th year level. Majority (42.5 %) of the respondents were ranked as Passed based on their GPA in the previous academic year; 31.5 percent of the students are ranked as Good, while 20.5% and 5.5% were ranked as Very Good and Excellent, respectively. The students represented four areas of nursing specialization: 24 (32.9 %) belonged to Operating Theater and Anesthesia Nursing (OTAN) Department, 21 (28.8 %) were from the Intensive and Emergency Nursing Department while 16 (21.9 %) and 12 (16.4 %) respondents were from the Public Health and Midwifery and Neonatal Nursing Departments, respectively.

Physical Assessment Self-Efficacy of Nursing Students. In general, the over-all level of self-efficacy was high with a mean of 7.96 out of a possible score of 10. From Table 1 it can be seen that the nursing students

included in the study have very high level of self-efficacy in performing assessment in the skin (8.77), nail (8.23), the hair, skull and face (8.29), ear (8.31), mouth and oropharynx (8.06), neck (8.05), breast and axilla (8.52), abdomen (8.48), muscle, bones and joints (8.32). On the other hand, the level of self-efficacy of these students was high when assessing the general appearance (7.89), the eyes (7.48), nose and sinuses (7.80), thorax and lungs (7.39), and the heart and peripheral pulses (7.34).

Students' Perception of PA Instruction Effectiveness.

In general, the over-all perception of the respondents on the effectiveness of Physical assessment instruction was high. Table 2 further indicates that the students perceived the clinical instruction on Physical Assessment in terms of satisfaction as very highly effective with a mean of 3.61 while they perceived the instruction on physical assessment instruction as highly effective in terms of attention, relevance, confidence with mean of 3.26, 3.42, and 3.47, respectively.

Correlation of Physical Assessment Self-efficacy and Perceived Effectiveness of Clinical Instruction.

The correlation between students' level of self-efficacy on physical assessment in relation to the perceived effectiveness of clinical instruction on physical assessment was not significant with a sig-value of 0.660. More so, a negative but almost negligible correlation with a Pearson r of -0.052 was obtained on statistical analysis of the data involving the two variables.

DISCUSSION

Physical examination skills are important for students of health sciences. A study by Reilly (2003) demonstrated that physical examination can have a substantial effect

Table 2. Perception of Nursing Students on Physical Assessment Instruction Effectiveness

	Mean	Standard Deviation	Adjectival Rating
Attention	3.26	0.46	High
Relevance	3.42	0.57	High
Confidence	3.47	0.59	High
Satisfaction	3.61	0.46	Very High
Over-all	3.43	0.43	High

Very Low = 1.00 - 1.50; Low = 1.51 - 2.50; High = 2.51 - 3.50; Very High = 3.51 - 4.00

on the care of medical inpatients. About one in every four (26%) patients in the present investigation had pivotal physical findings. As this is also observed among patients in the hospital and clinics affiliated with the university for its students' clinical exposure, the clinical instructors of Omar Al-Mukhtar University College of Nursing saw it necessary to conduct cephalocaudal assessment training for its students.

This current study was able to establish that the nursing students possessed a high level of self-efficacy to perform physical assessment after nine days of training. The methodology employed in the training consisted of didactic, demonstration and return-demonstration using peers as sample patients. The process by which students examine each other as part of their learning process in anatomy and clinical skills is known as peer physical examination or PPE (McLachlan et al., 2004).

Bandura (1997) has shown that when students believe that they are capable of doing a task, they will exert maximal effort and persist despite failure. The fact that the nursing students of this university had high level of self-efficacy in performing physical assessment offers advantages as they would persist in performing physical assessment even when encountering difficulties such as uncooperative patients and frequent corrections from clinical instructors. This similarly implies that the nursing students would not hesitate performing this nursing skill as students and would continue to do so when they engage in professional practice.

Self-efficacy for the ability to perform patient care is vital in that it may be required even to initiate performance. In providing nursing care to patients by student nurses. The advantages of greater self-efficacy include higher motivation in the face of obstacles and better chances of persisting over time outside a situation of formal supervision.

Clinical instructors must be cautioned on handling students with high levels of self-efficacy. A nursing student who incorrectly believes that he or she is capable of performing a skill may harm the patient if he or she independently performs the skill instead of appropriately seeking help. In addition to possessing efficacy for task performance, it is important that students correctly calibrate their self-efficacy or make accurate estimates of their ability (Chen, 2003). In the provision of healthcare, inaccurate calibration of self-efficacy may lead to adverse patient outcomes. A nursing student who incorrectly

believes that he or she is capable of performing a skill may harm the patient if he or she independently performs the skill instead of appropriately seeking help.

For this reason, it is paramount that clinical instructors provide proper guidance to students. Errors must be corrected at the soonest possible time. Similarly, those exhibiting low efficacy must be continuously instructed using motivational techniques. Kelly (1999) feels that nurse educators are responsible for providing instructional strategies to prepare graduates for the transition and that the educational system should focus on emancipating individuals to know themselves and develop a realistic sense of self-competence.

This study demonstrated that the students viewed the instruction that they received to be effective based on Keller's Model. Among the four components of this model - attention, relevance, confidence and satisfaction - the mean score was highest for satisfaction and lowest for attention. Instructors must therefore exert more effort to enhance student attention during clinical training through perceptual and inquiry arousal (Keller, 1987). Activities that enhance attention such as active participation, variability, humor, incongruity and conflict, the use of specific examples and inquiry must be employed (ARCS Model of Motivational Design).

The absence of a positive correlation between the students' self-efficacy and their perception on instruction effectiveness must be investigated. There are four recognized sources of self-efficacy - mastery experiences, social modeling, social persuasions, and psychological responses (Cherry, n.d). The absence of a statistical correlation between the variables investigated in this study does not imply an absence of instructor's influence on the student's self-efficacy.

Clinical instructors play a role in enhancing their students' efficacy by providing opportunities to master the skill inside and outside the classroom setting. Bandura (1997) believes that mastery experiences is the most effective way of developing a strong sense of efficacy. Students must be allowed to observe other students successfully perform the skill as a form of social modeling. Clinical instructors can utilize social persuasion by positive appraisal (Rowbotham and Schmitz, 2013) and by carefully selecting words when correcting an error. Verbal encouragement may be used to decrease self-doubt. The students' psychological response can be addressed by the instructors by creating an environment

that minimizes tension and allowing students to understand that mild anxiety experienced during skill performance may be beneficial. According to Bandura, the perception and interpretation of the emotional reactions is more important than its intensity.

CONCLUSION

The nursing students possessed a high level of self-efficacy in performing physical assessment of patients following the training conducted by the nursing faculty of Omar Al-Mukhtar University College of Nursing. These students perceived the training that they received to be effective in terms of attention, relevance, confidence and satisfaction. Although it cannot be statistically established that the confidence of the students was a direct effect of the instruction provided, the ability of the instructors to motivate their learning must not be undermined as clinical instructors can directly and indirectly influence the four sources of efficacy.

REFERENCES

- ARCS Model of Motivational Design (2007). Retrieved from <http://www.learning-theories.com/kellers-arcs-model-of-motivational-design.html>.
- Bahn D(2001). Social Learning Theory: its application in the context of nurse education. *Nurs. Edu. Today*. 21: 110–117.
- Bandura A(1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychol. Rev.* 84: 191-215.
- Bandura A. (1994). Self-efficacy. In V. S. Ramachaudran (Ed.), *Encycl. human behavior*, 4. New York: Acad. Press. Pp. 71-81.
- Beyea SC, Con RLK, Slattery MJ(2007). A nurse residency program for competence development using human patient simulation. *J. Nurs. Staff Devel.* 23(2): 77–82.
- Chen P(2003). Exploring the accuracy and predictability of the self-efficacy beliefs of seventh-grade mathematics students. *Learning and Individual Differences.* 14: 79–92.
- Cherry K(2014). What is Self-Efficacy? About.com. Psychology. Retrieved from <http://psychology.about.com/od/theoriesofpersonality/a/self-efficacy.htm>.
- Croxon L, Maginnis C(2009). Evaluation of clinical teaching models for nursing practice. *Nurs. Edu. Practice.* 9(4): 236-243.
- Dillon P(2007). Health Assessment: A Critical Thinking, Case Studies Approach, 2nd edition. Philadelphia: F. A. Davis Company. Pp. 4-25.
- Doenges M, Moorhouse M, Geisler MA(2002). Nursing Care Plans: Guidelines for Individualizing Patient Care. Philadelphia: F. A. Davis Company.
- Fitton E(2011). Self-Efficacy. Funderstanding. Retrieved from <http://www.funderstanding.com/educators/self-efficacy/>.
- Graham S, Weiner B(1996). Theories and Principles of Motivation. In D. C. Berliner and R. C. Calfee (Eds.), *Handbook of Educational Psychology*. (Macmillan Res. Edu. Handbook Series). Pp. 63–84.
- Halfer D, Graf E(2006). Graduate nurse perceptions of the work experience. *Nurs. Econs.* 24(3):150—155.
- Hilton P(2004). Fundamental nursing skills. London: Whurr Publishers. pp. 17-19
- Keller JM(1983). Motivational design of instruction. In C. M. Reigeluth (Ed.), *Instructional-design theories and models: An overview of their current status*. Hillsdale, NJ: Lawrence Erlbaum Associates.
- Keller JM(1984). The use of the ARCS model of motivation in teacher training. In K. Shaw and A. J. Trott (Eds.), *Aspects of Educational Technology Volume XVII: staff Development and Career Updating*. London: Kogan. Pp. 12-18.
- Keller JM(1987). Development and use of the ARCS model of motivational design. *J. Instr. Devel.* 10(3): 2-10.
- Keller JM(2010). Motivational Design for Learning and Performance: The ARCS model approach. New York: Springer.
- Kelly B(1999). Hospital nursing: 'It's a battle'. A follow-up study of English graduate nurses. *J. Advance Nurs.* 24 (5):1063–1069.
- McLachlan JC, Bligh J, Bradley P, Searle J(2004). Teaching anatomy without cadavers. *Med. Edu.* 38: 418–424.
- NHS Education for Scotland (2007). Partnerships for care: taking forward the Scottish clinical skills strategy. Executive Summary. NES, Edinburgh.
- Reilly B(2003). Physical examination in the care of medical inpatients: an observational study. *THE LANCET*. Pp. 362.
- Rowbotham M, Schmitz G(2013). Development and Validation of a Student Self-efficacy Scale. *J. Nurs. Care.* 2: Pp. 1.
- Tawalbeh L, Tubaishat A(2014). Effect of Simulation on Knowledge of Advanced Cardiac Life Support, Knowledge Retention, and Confidence of Nursing Students in Jordan. *J. Nurs. Edu.* 53(1): 38-44.