Interpersonal and Intrapersonal Intelligence Skills of Nursing Students: Its Relevance in the Goal of Patient Care

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ABSTRACT

Background: *The researchers believe in the power of intelligence to improve the clinical performance of nursing students at Fakeeh College for Medical Sciences. The clinical competency shown of every nursing student is not exactly like the other. The impact of these differences may deliver unharmonious and differentiated outcomes in the clinical performance of the students in achieving the goals of care.* **Objective:** *The study aims to identify the relevance of the level of intelligence manifested by the Arab student nurses with respect to interpersonal and intrapersonal and their level of clinical performance in achieving the goal of care.* **Methods:** *This study used a quantitative descriptive. The design was utilized to describe the interpersonal and intrapersonal intelligence of nursing students.* **Results:** *The findings of the study revealed that the majority of Arab nursing student respondents demonstrated a high level of intrapersonal intelligence ($\overline{x}=1.76$, SD ± 0.41). Meanwhile, Arab nursing students demonstrated a very high level of intelligence in only 3 of the intrapersonal intelligence skills, namely: self-therapeutic ($\overline{x}=2.00$, SD ± 0.00), ethico-moral-legal responsibilities ($\overline{x}=1.85$, SD ± 0.35), and evidenced-based nursing care ($\overline{x}=1.81$, SD ± 0.40).* **Conclusion:** *The study concludes that Arab nursing student respondents have a high and very high level of intrapersonal and interpersonal intelligence, respectively. Also, the study concludes that there is a statistically significant relationship between interpersonal skills and clinical performance but there was no statistically significant relationship between intrapersonal skills and clinical performance among Arab nursing students.*

Keywords: Interpersonal, Intrapersonal, Intelligence, Goal of care, Clinical performance

INTRODUCTION

Intelligence involves specific mental abilities to learn from experience to solve problems and use knowledge to adapt to new situations. Intelligence is a common ingredient for expert performance in medicine and requires daily practice. The need for high intelligence can help a person get into the profession. Howard Garder even identified intrapersonal (self) and interpersonal (other people) aptitudes as one of the 8th intelligence [1]. In the practice of the nursing profession, nurses have to juggle the different expectations that are made of them. Intrapersonal skills and abilities of student nurses must be mastered and developed throughout the course of their lives in order to meet external expectations. Likewise, such skills among student nurses are important because it can be used in the clinical practice environment to help them gain educational experience by working with the patients, staff nurses and other professionals [2]. Thus, a broad framework of intelligence and skills would identify the nurse as a capable practitioner. Therefore, knowledge is the foundation of an effective practice [3].

The researchers believe in the power of intelligences to improve the clinical performance of nursing students at Fakeeh College for Medical Sciences. The clinical competency shown of every nursing student is not exactly like the other. There is an observed culture of interpersonal and intrapersonal differences among the student nurses, a schooling phenomenon that needs to be defined deeply as it needs immediate attention, researches if possible. The impact of these differences may deliver unharmonious and differentiated outcomes in the clinical performance of the students in achieving the goals of care. A model of unifying students' interpersonal and intrapersonal differences must be created in order to improve clinical practices despite individual differences. The concept of this study is

logically based on the principle of multiple intelligences. The proponent wishes to explore the possibility that partly, several human intelligences may deliver impact on the improved clinical expertise of nursing students in achieving the various goals of care. The research aims to expand the intelligence skills of the nursing student of Fakeeh College for Medical Sciences, Jeddah, Saudi Arabia in the same manner that the students will transcend into globally competitive nursing graduates in near future.

Conceptual Framework

The study utilized the Imogene King's Goal Attainment theory. This theory is coined as a framework of the dynamic interacting system and transactional process during nurse-patient interaction in order to achieve goal attainment and to attain patient care goals or outcomes [4]. Such a system includes two subsystems, namely, the intrapersonal system (individual) and the interpersonal system (nurse-patient). Accordingly, intrapersonal aspect constitutes the inner world, composite of inner thought, feelings, personal value system, and individual existence. Through the intrapersonal system, a nurse is capable of rational thinking and decision making in most situations. On the other hand, the interpersonal system is a process of action, reaction, interaction and transaction between nurse and patient [5] (Figure 1).
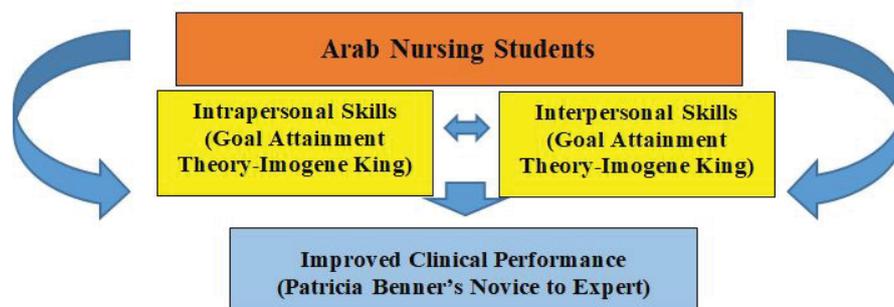

Figure 1 Conceptual Framework

Dr. Patricia Benner studied the process of new nurse skill acquisition and clinical performance. It concluded that new graduates' perceptions of complex clinical situations were significantly different from those of nurses with more experience and skill. Benner, et al., identified the stages of clinical skill acquisition as a novice, advanced beginner, competent, proficient, and expert. This awareness is the first step of learning to manage the transition from new graduate to becoming skilled clinician [6].

In summary, interpersonal and intrapersonal skills will be identified and treated as personal strengths for individual student nurses in order to deliver symbolic effects to quality clinical performance. Likewise, interpersonal and intrapersonal are 2 important skills in the execution of the nursing job which is seen by the proponent of this research as a significant element to improve students' level of achieving nursing goals of care. These skills may champion nursing students' clinical performance as they become essential agents of healthcare among patients with different health conditions in the hospital.

Research Objectives

The problems to be addressed are:

- What is the level of intelligence manifested by Arab student nurses with respect to interpersonal and interpersonal intelligence?

- What is the level of clinical performance among Arab nursing students during their clinical practicum?

- Is there a significant relationship between intrapersonal skill and clinical performance of Arab nursing students?

- Is there a significant relationship between interpersonal skill and clinical performance of Arab nursing students?

- What recommendation can be proposed to enhance the interpersonal and intrapersonal intelligence of Arab nursing students?

MATERIALS AND METHODS

This study used a quantitative descriptive design. The design was utilized to describe the interpersonal and intrapersonal intelligence of nursing students. A quantitative descriptive design is appropriate to quantify interpersonal and intrapersonal intelligence [7]. The study was conducted in one of the private institutions in Jeddah, Saudi Arabia, Fakeeh College for Medical Sciences. Respondents are nursing students that have clinical exposure. The researchers decided to cover the total population of students (N=131) in the institution as respondents. It included only students who had their clinical training from levels 3 to 8. The students in this level had the first-hand experience of nurse-patient interaction making them eligible as respondents of the study. The study excluded level 1 and level 2 for they do not have clinical training at this point.

The tool utilized to gather data is a self-made questionnaire that contains items regarding interpersonal and intrapersonal intelligence. A questionnaire as a tool should stand-alone with no guidance needed from the researcher and respondents, and are able to comprehend English. The questionnaire consisted of 28 questions regarding the above-mentioned intelligence. Items number 1 to 13 consists of interpersonal questions while items 14 to 28 refers to intrapersonal. The respondent is instructed to tick the box of proficiency or non-proficiency of the intelligence.

In terms of the validity of the questionnaire, this was established by giving it to the evaluation of 3 experts to compute for the content validity index (CVI). Item CVI is 0.967, a score which is within the accepted range of score of the Content Validity Index.

The reliability, test, and re-test were performed to 10 respondents. Ten students who were selected to have test and re-test were not included as respondents of the study. They were given the same questionnaire. After a week, the same students repeated answering the same questionnaire to know whether their answers changed or not, this tested if our questionnaire was reliable. Test and re-test reflect the extent to which the rank orders measure the performance of the subjects, the same on the 2 separate measurement occasions. The result is 0.85 which is acceptable for the researchers to proceed with the actual data gathering.

The interpersonal and intrapersonal intelligence was determined by adding all of the proficient and non-proficient responses from the items of the different questions. Descriptive statistics were used to determine the intelligence for the different items. Scores were tallied and intelligence was described using 5 categories per variables. The sum of the responses was classified into 5 categories which are "very low', "low", and "moderate", "high and very high" intelligence. The researcher also obtained the clinical marks of the students to obtain the relationship between the interpersonal and intrapersonal intelligence of the students.

The researcher used mean scores and computed the standard deviation to determine the level of the respondents' proficiency. Correlation and multiple regression analyses were conducted to examine the relationship between interpersonal and intrapersonal intelligence with the clinical performance of the students. Multiple regression is used when the researcher wants to predict the value of 2 or more other variables. The researchers subjected the data with statistical package for social sciences (SPSS) version 20.

RESULTS

Table 1 depicts the level of intrapersonal intelligence among student nurses. In general, the findings of the study revealed that the majority of Arab nursing student respondents demonstrated a high level of intrapersonal intelligence ($\overline{x}$=1.76, SD ± 0.41). Specifically, most of the Arab nursing students demonstrated a high level of intelligence in 12 intrapersonal intelligence skills in terms of: prioritize nursing problem ($\overline{x}$=1.70, SD ± 0.46), therapeutic care plan ($\overline{x}$=1.79, SD ± 0.41), self-reflection ($\overline{x}$=1.75, SD ± 0.44), research translation ($\overline{x}$=1.72, SD ± 0.45), clinical pathway ($\overline{x}$=1.70, SD ± 0.46), rational decision-making ($\overline{x}$=1.76, SD ± 0.43), problem-solving ($\overline{x}$=1.72, SD ± 0.45), critical thinking skill ($\overline{x}$=1.67, SD ± 0.47), scientific inquiry ($\overline{x}$=1.78, SD ± 0.42), self-esteem ($\overline{x}$=1.73, SD ± 0.45), competence ($\overline{x}$=1.70, SD ± 0.46), and reflective journal writing ($\overline{x}$=1.73, SD ± 0.45).

Meanwhile, Arab nursing students demonstrated a very high level of intelligence in only 3 of the intrapersonal intelligence skills, namely: self-therapeutic ($\overline{x}$=2.00, SD ± 0.00), ethico-moral-legal responsibilities ($\overline{x}$=1.85, SD ± 0.35), and evidenced-based nursing care ($\overline{x}$=1.81, SD ± 0.40).

Table 1 Student nurses' level of intrapersonal intelligence

Intrapersonal Intelligence	Mean Score	SD	Level of Intelligence
Ability to use therapeutic self.	2.00	0.00	Very High
Utilizes clinical data to prioritize nursing problems and formulate differential diagnoses.	1.70	0.46	High
Formulates standard diagnostic and therapeutic plans demonstrating awareness of risks, benefits, costs, patient preferences, and ethical and psychosocial issues	1.79	0.41	High
Demonstrates the ability to perform self-reflection in all nursing actions	1.75	0.44	High
Demonstrates a high level of commitment to ethical-moral-legal principles	1.85	0.35	Very High
Reads regularly, in texts and in the original literature, to achieve a broad knowledge base and translates pertinent literature to clinical practice.	1.72	0.45	High
Integrates clinical pathway in managing cases of patients	1.70	0.46	High
Demonstrates sound and rational decision-making skills	1.76	0.43	High
Performs effective problem-solving skills in every nursing situations	1.72	0.45	High
Exudes critical thinking and good clinical reasoning skills during patient care	1.67	0.47	High
Uses appropriate inquiry and intuition in managing patient's condition	1.78	0.42	High
Always projecting high level of self-esteem to conduct standard clinical procedures	1.73	0.45	High
Exhibits rationality, competence and independence in delivering health care	1.7	0.46	High
Performs reflective journal writing to determine self-progress and self-improvement	1.73	0.45	High
Uses evidenced-based nursing care in the practice	1.81	0.4	Very High
Overall Mean	1.76	0.41	High

Legend: 1.00-1.20 means very low level; 1.21-1.40 interprets low level; 1.41-1.60 signifies moderate level; 1.61-1.80 means high level; and 1.81-2.00 implies very high level

Table 2 depicts the level of interpersonal intelligence among student nurses. In general, the findings of the study revealed that the majority of Arab nursing student respondents demonstrated a very high level of interpersonal intelligence ($\overline{x}$=1.84, SD ± 0.36). Specifically, most of the Arab nursing students demonstrated a very high level of intelligence in the 10 interpersonal intelligence skills in terms of: nurse-patient relationship ($\overline{x}$=1.92, SD ± 0.27), therapeutic communication ($\overline{x}$=1.88, SD ± 0.32), interpersonal communication ($\overline{x}$=1.88, SD ± 0.33), therapeutic relationship ($\overline{x}$=1.83, SD ± 0.37), interpersonal relation ($\overline{x}$=1.83, SD ± 0.38), eye contact ($\overline{x}$=1.88, SD ± 0.33), empathy ($\overline{x}$=1.82, SD ± 0.39), patient familiarization ($\overline{x}$=1.73, SD ± 0.45), promote patient's dignity ($\overline{x}$=1.85, SD ± 0.36), and respectful attitude ($\overline{x}$=1.85, SD ± 0.36). Meanwhile, Arab nursing students demonstrated a high level of intelligence in only 2 of the interpersonal intelligence skills, namely: non-judgmental attitude ($\overline{x}$=1.76, SD ± 0.43), and patient health teaching ($\overline{x}$=1.76, SD ± 0.43).

Table 2 Student nurses' level of interpersonal intelligence

Interpersonal Intelligence	Mean Score	SD	Level of Intelligence
Manifests good nurse-patient relationship.	1.92	0.27	Very High
Utilize excellent communication skills with patients and their families.	1.88	0.32	Very High
Utilize excellent communication skills with other members of the health care team.	1.88	0.33	Very High
Ability to maintain therapeutic relationship with patients.	1.83	0.37	Very High
Constantly improves relations with colleagues	1.88	0.33	Very High
Constantly improves relations with clinical supervisors and staff	1.83	0.38	Very High
Manifests good, strong and meaningful eye contact every patient contact.	1.88	0.33	Very High
Provide non-judgmental attitude in dealing with patients.	1.76	0.43	High
Improving and developing good relations with patients and families by using empathy, sympathy.	1.82	0.39	Very High
Familiarizes patients' name and use it on daily contacts	1.86	0.35	Very High
Preserve patient's dignity, integrity and self-worth.	1.85	0.36	Very High
Ability to conduct health education and patient teaching.	1.76	0.43	High
Demonstrate respectful attitude towards others including patients, family, and colleagues.	1.85	0.36	Very High
Overall Mean	1.84	0.36	Very High

Legend: 1.00-1.20 means very low level; 1.21-1.40 interprets low level; 1.41-1.60 signifies moderate level; 1.61-1.80 means high level; and 1.81-2.00 implies very high level

Table 3 depicts the Arab nursing students' clinical performance marks throughout their clinical practicum. These findings disclosed that most (n=44; 33.6%) of the Arab student nurses got very high in their clinical performance marks that fall under A+ (95 to 100 mark). Meanwhile, some ((n=28; 21.3%) and (n=24; 18.3%)) of the student nurses have their clinical performance marks with B+ (85 to 89 mark) and A (90 to 94 mark) falls under second and third ranks, respectively. Lastly, minority (n=1; 0.8%) of the Arab student nurses got very low in their clinical performance marks that fall under D (60 to 64 mark) and F (60 and below).

Table 3 Arab nursing students level of clinical performance level

Clinical Performance Marks	Frequency	Percentage (%)
A+ (95-100)	44	33.6%
A (90-94)	24	18.3%
B+ (85-89)	28	21.3%
B (80-84)	11	8.4%
C+ (75-79)	13	9.9%
C (70-74)	6	4.6%
D+ (65-69)	3	2.3%
D (60-64)	1	0.8%
F (60 below)	1	0.8%
Total Score	131	100.0%

The study targeted to test the significant relationship between intrapersonal skills and clinical performance among Arab student nurses as presented in Table 4. Linear regression (r) revealed a no statistically significant relationship between intrapersonal skills and clinical performance (r=0.117; F=0.179; p>0.005) among nursing students. Moreover, the findings of the study revealed that the intrapersonal skill is a low predictive factor (r=0.117; r^2=0.006) and not sufficient enough in predicting the clinical performance of the nursing students

Table 4 Test of a significant relationship between intrapersonal intelligence and clinical performance among Arab nursing student

Regression Statistics					
Multiple R			0.117912769		
R Square			0.013903421		
Adjusted R Square			0.006259262		
Standard Error			9.717790802		
Observations			131		
ANOVA	**df**	**SS**	**MS**	**F**	**Significance F**
Regression	1	171.7619768	171.7619768	1.818829286	0.17981558
Residual	129	12182.174109	94.43545808		
Total	130	12353.93607	-		
Variables	**Coefficients**	**Stand. Error**	**t Stat**	**p-value**	**Lower 95%**	**Upper 95%**
Intercept	82.46300739	4.721990429	17.46361172	8.65761E-3	73.1204336	91.8055811
Intrapersonal	0.240306305	0.178184202	1.348639791	0.1798155*	-0.11223550	0.59284811

*Correlation is statistically significant if p<0.05 level

This study meant to test the significant relationship between interpersonal skills and clinical performance among Arab student nurses as presented in Table 5. Linear regression (r) revealed a statistically significant relationship between interpersonal skills and clinical performance (r=0.199; F=0.022; p<0.005) among nursing students. On the contrary, findings of the study revealed that the interpersonal skill is a low predictive factor (r=0.199; r^2=0.032) and not sufficient enough in predicting the clinical performance of the nursing students.

Table 5 Test of a significant relationship between interpersonal intelligence and clinical performance among Arab nursing students

Regression Statistics	
Multiple R	0.199823322
R Square	0.03992936

Adjusted R Square				0.032486952	
Standard Error				9.588692998	
Observations				131	
ANOVA	**df**	**SS**	**MS**	**F**	**Significance F**
Regression	1	493.28476	493.28476	5.36511295	0.022120526
Residual	129	11860.6513	91.9430334		
Total	130	12353.9361	-		
Variables	**Coefficients**	**Stand. Error**	**t Stat**	**P-value**	**Lower 95%**	**Upper 95%**
Intercept	73.1933947	6.75862926	10.8296212	7.74656E-2	59.8212811	86.56550821
Intrapersonal	0.64766559	0.2796156	2.31627135	0.02212052	0.09443928	1.200891898
* Correlation is statistically significant if p<0.05 level						

DISCUSSION

The finding of the study that "the majority of Arab nursing student respondents have a high level of intrapersonal intelligence" is supported by studies in Canada. Based on the study of Read and Laschinger, student nurses from enhanced and conventional nursing programs in Canada demonstrated a great level of intrapersonal skills. Intrapersonal intelligence involves introspective and self-reflective capacities which are often times manifested by having a deep understanding of the one's self and recognizing one's particular assets and drawbacks [8]. Thus, intrapersonal skills or intrapersonal intelligence may not be totally manifested by a nursing student [9]. In general, the finding of the study implies that Arab student nurses sometimes demonstrate proficiency in utilizing intrapersonal skills like prioritization of nursing problems, self-reflection, research translation, clinical pathway, rational decision-making, problem-solving, critical thinking skill, scientific inquiry, self-esteem, competence, and reflective journal writing.

The finding of the study that "the majority of Arab nursing student respondents have a very high level of interpersonal intelligence" is congruent in the studies in Taiwan and Ireland. Accordingly, interpersonal skills are indispensable for advanced practice nursing (APN) in our progressively multifaceted healthcare structure. Findings of the study revealed that first year BSN students in Taiwan demonstrated significant ($p \leq 0.025$) enhancements on interpersonal skill total scores [10]. Furthermore, Sheahan, et al., even cited that the highest multiple intelligence (MI) reported with first-year undergraduate nursing students in Ireland is interpersonal intelligence. In addition, undergraduate nursing students in each of the 4 years of the baccalaureate nursing program had intelligence scores within the effective functioning capacity which enables them to establish satisfying interpersonal relationship [11]. This finding was even supported by Bhana, et al., which states that interpersonal skill is the core of a nurse-patient relationship. Moreover, student nurses necessitate training in the improvement of the elevated level of interpersonal intelligence which is necessary to maintain meaningful interactions [12]. Furthermore, Gardner, et al., even added that nurses as individuals often demonstrated a high interpersonal intelligence as evidenced by effective communication, cooperation, sensitivity and empathize easily with others [13]. On the contrary, interpersonal skills or interpersonal intelligence may not be totally manifested by a nursing student. In general, the finding of the study implies that Arab student nurses always/often demonstrate proficiency in utilizing interpersonal skills like a nurse-patient relationship, therapeutic communication, interpersonal communication, therapeutic relationship, interpersonal relation, eye contact, empathy, promote patient's dignity, and respectful attitude to the patient.

The finding of the study that "the majority of the Arab student nurses demonstrated a moderately proficient level of clinical performance" is congruent with the studies by others. Based on the finding of the study Chuang, et al., nursing students' level clinical performance was improved (F=4.219, p=0.04) [14]. Thus, nursing students demonstrated clinical skills competency as evidenced by the right and suitable execution of nursing skills to guarantee patient safety and quality nursing care. As cited by Cormack, at al., the consistent patients' appraisal of the nursing students' clinical performance in the domain of clinical nursing skills displayed tall scores of 96% in all OSCEs. Thus, this validates nursing student's development from novice to competent in the clinical practice [15]. Also, Kim, et al., emphasized that nursing students' level of clinical nursing skills performance was significantly enhanced and improved (t=7.05, p<0.001). Clinical nursing practice is significant since it aids nursing students to encounter the realism of clinical nursing that cannot be absorbed through theoretical education [16]. Furthermore, findings of Borg, et al., showed that the highest mean clinical performance scores were acquired in the clinical scenario (M=19.7, S.D=3.41) [17]. A study by Park, et al., revealed that the mean scores in clinical performance for senior nursing students were significantly

higher despite limited opportunities in the clinical practicum settings [18]. Ye, et al., even cited that improved clinical performance was observed among practicing nursing students. Hence, clinical performance is viewed as a primary and fundamental gist of nursing quality [19]. Moreover, Kopp stated that a statistically significant improvement was found between midterm ($\overline{x}$=0.89) and final performance ($\overline{x}$=0.94; t=-15.90; p<0.001, two-tailed) exhibiting a rise in final clinical performance among student nurses exhausting the grading rubric [20]. Also, the clinical performance mean score among nursing students was significantly high as cited by Malekzadeh. Thus, this study showed a significant improvement in nursing students' level of clinical performance [21]. The finding of the study by Aboshiaqah, et al., revealed that the preceptorship program heightened the clinical performance of the nursing student interns in the clinical setting. Specifically, enhanced clinical competence was noted primarily in priority-setting, multitasking, expressing complex nursing skills, and the conveyance of quality nursing care [22]. Lastly, the results of the study by Shahsavari, et al., specified that the students who participated in the primary clinical skills refresher course experienced better clinical performance during their internship program [23].

The finding of the study that "there is no statistically significant relationship between intrapersonal skills and clinical performance of the Arab nursing students" is not supported by the studies in Massachusetts. Accordingly, sustainable high levels of intrapersonal skills often lead to better patient outcomes and enhanced clinical job performance among nurses [24]. Furthermore, intrapersonal skills or innate personal skills may champion nursing students' clinical performance as they become essential agents of healthcare among patients with different health conditions in the hospital. Furthermore, intrapersonal skills are identified and treated as personal strengths for individual student nurses. Intrapersonal skills in the execution of the nursing job is a significant element to improve nursing students level of achieving nursing goals of care and effective delivery of quality clinical performance [25]. Lastly, intrapersonal skill has a distinct contribution in predicting job performance, attitudes and behaviors among nurses.

The finding of the study that "there is a statistically significant relationship between interpersonal skills and clinical performance of the Arab nursing students" is supported by the studies in. Furthermore, Mannitoba, et al., even stated that nursing students in Winnipeg, Canada must secure the required technical and interpersonal skills in the clinical area to make clinical judgments. Accordingly, a sustainable high level of interpersonal skills often leads to better patient outcomes and enhanced clinical job performance among nurses [24]. Furthermore, it has been added that interpersonal skills are identified and treated as personal strengths for individual student nurses. Interpersonal skills in the execution of the nursing job is a significant element to improve nursing students' level of achieving nursing goals of care and effective delivery of quality clinical performance [25,26]. Findings of the study revealed that first year BSN students in Taiwan demonstrated high student learning (94.44%) and indicated significant (p ≤ 0.025) improvements on interpersonal skill total scores [10]. Lastly, a first-year nursing student in Ireland was reported to have higher scores in all 3 clinical examinations (p<0.05). This suggests that multiple intelligence (interpersonal intelligence) had an affirmative effect on clinical skill acquisition and clinical performance.

CONCLUSION

The study concludes that Arab nursing student respondents have a high and very high level of intrapersonal and interpersonal intelligence, respectively. Also, the study concludes that there is a statistically significant relationship between interpersonal skills and clinical performance but no statistically significant relationship between intrapersonal skills and clinical performance among Arab nursing students. Lastly, intrapersonal and interpersonal skills are considered low predictive factors and not sufficient enough in predicting the clinical performance of nursing students.

DECLARATIONS

Conflict of Interest

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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