

## Perception of Clinical Decision Making among Nurses: Students versus Interns

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### Abstract:

**Back ground:** Clinical Decision-Making (CDM) is a dynamic and complex thinking process that nurses have to make frequently each day while planning and delivering care. **The aim** of this study was to compare between baccalaureate (final year) nursing students and interns regarding their perception of clinical decision-making. **Setting & Sample:** An analytic cross-sectional design was used to conduct the study at the Faculty of Nursing, Zagazig University on 100 baccalaureate nursing students and 124 interns selected by convenience sampling. **Tool:** A self-administered questionnaire form including the Clinical Decision-Making in Nursing Scale was used to collect data. The fieldwork lasted from September to November 2012. **The results** showed no significant differences between the students and interns in the mean and median scores of all four subscales and the total score. In both, the scores are higher for the subscales of searching for alternatives and canvassing objectives/values. The median total scores were equal for males and females (3.16) and almost equal for single (3.18) and married (3.15) respondents. Age and academic grade achievement had no influence on perception of decision-making. **The study concludes** that final year nursing students and nurse interns have average clinical decision-making with no difference in the perceptions of the two groups. **Recommendations:** The faculty of nursing should give more emphasis on the development of this skill in undergraduate curricula and in internship programs, with provision of needed resources for research and evidence-based practice. Further research is suggested for identification of the factors that may improve or impede the development of this skill among nurses.

**Key words:** Clinical decision making, nurse students, interns, perception

### Introduction:

Clinical decision making is a process that nurses undertaken on a daily basis when they make judgments about the care that they provide to patients and management issues<sup>(1)</sup>. Nurses' practice takes place in a context of ongoing advances in research and technology. The dynamic and uncertain nature of health care environment requires nurses to be competent decision –makers in order to respond to client's needs.<sup>(2)</sup>

In the clinical setting, nurses are continually faced with demands to make decisions of care. The process of coming to a choice is the essence of decision making. This process is viewed as complex.<sup>(3,4)</sup> Clinical

decision making has been defined as a complex process involving observation, information processing, critical thinking, evaluating evidence, applying relevant knowledge, problem solving skills and clinical judgment to select the best course of action which optimizes a patient's health and minimizes any potential harm.<sup>(5)</sup> Clinical decision-making is a unique process that involves the interplay between knowledge of pre-existing pathological conditions, explicit patient information, nursing care and experiential learning.<sup>(3)</sup>

Clinical decision-making is an essential component of professional nursing care and, nurses' ability to

make effective clinical decisions is the most important factor affecting the quality of care.<sup>(6,7)</sup> Thus, the Institute of Medicine (IOM) report stressed that the quality of patient care is directly affected by the degree to which the hospital nurses are empowered in making decisions concerning the plans of care for their patients, and in organizational decision making as well.<sup>(8)</sup>

O'Neill et al.<sup>(1)</sup> suggest that the complexity of clinical decision making (CDM) requires a broad knowledge base and access to reliable sources of information, as well as working in a supportive environment

The competence to autonomous and responsible decision-making is based on an educational process, where the ability to perceive the situation of client as changeable is developed.<sup>(9)</sup> The nursing education has been challenged in adopting innovative approaches aimed at reinforcing psychomotor skills such as clinical decision-making such as the use of skills labs and computer-simulations, which proved successful in achieving this purpose.<sup>(10)</sup> Other approaches include opportunities to see real patients with the skilled guidance of a clinical coach.<sup>(11)</sup> Learning from experience helps students expand and develop their clinical knowledge, and improve judgment in complex situations, as well as their clinical reasoning and decision-making skills.<sup>(12)</sup>

Nursing students often do not have the opportunity to take a full patient assignment before transitioning into practice. The internship programs are intended to assist students with a smooth and safe transition-into-practice, and acclimatize them to taking a full patient assignment.<sup>(13)</sup> Such programs were perceived by students to have significant enrichment

in their knowledge, skill and attitude.<sup>(14)</sup> However, few studies assessed the effectiveness of nursing internship programs on their clinical decision-making abilities.<sup>(15,16)</sup>

### **Significance of the study:**

Although clinical decision-making is embedded in the everyday world of nursing students, the researchers recognized that little is known about how nursing students learn and implement this process, and whether the internship program enhances it. This work is an attempt to fill a gap of knowledge in the literature regarding this issue. For the sake of this study, the operational definition of clinical decision-making is that measured by the Clinical Decision-Making in Nursing Scale [CDMNS] (*Jenkins, 1983*).<sup>(17)</sup>

### **Aim of the study:**

The aim of this study was to compare between baccalaureate (final year) nursing students and interns regarding their perception of clinical decision-making.

### **Research question:**

whether there is a dissonance between baccalaureate nursing students and interns' perception of clinical decisional involvement, and whether this perception is influenced by their personal characteristics?

### **Subjects and methods:**

#### ***Research design and setting:***

An analytic cross-sectional design was adopted to achieve the aim of this study, which was conducted at the Faculty of Nursing, Zagazig University.

#### ***Subjects:***

The study involved two groups of 100 baccalaureate nursing students and 124 interns selected by convenience

sampling technique. The inclusion criterion was being enrolled at the Faculty of Nursing in the study setting during the time of the study in fourth year and internship program, respectively. The sample size was calculated in proportion with the total numbers of baccalaureate students and interns. It was large enough to demonstrate a presumed difference in the perception of clinical decision-making of 20% or more between the two groups at 95% level of confidence and 80% power, taking into account a dropout rate of about 15%.

#### ***Data collection tool:***

A self-administered questionnaire form was utilized to collect data. It consists of two parts. The first part is concerned with personal data as age, gender, marital status, and academic grade. The second part consists of the Clinical Decision-Making in Nursing Scale (CDMNS) developed by *Jenkins (1983)*<sup>(17)</sup> to measure nursing students' self-perception of their own clinical decision-making abilities. The scale consists of 40 items with a 5-point Likert-type response asking respondent about his/her decision-making behavior while caring for patients. They are classified in four subscales of 10 items each. The first is concerned with the "search for alternatives or options" with actions characterized by the context of the situation and past experience in the manner one searches for options. The second is that of "canvassing of objectives and values," which addresses an individual's professional values and attitudes toward cultural diversity. The third is the subscale of "evaluation and re-evaluation of consequences," which involves appraising and reconsidering one's course of action and evaluating potential outcomes. The last is concerned with the "search for information and unbiased assimilation

of new information," which is especially relevant for this study with its emphasis on evidence-based practice.

The scale items are scored "1" to "5" from "never" to "always," with reverse scoring for negative items so that higher scores denote a more positive perception of decision-making.<sup>(18)</sup> The scores of the items of each subscale are averaged giving a mean score ranging from 1 to 5.<sup>(19)</sup> Its reliability was measured and proved to be high with Cronbach alpha coefficient for internal consistency 0.88 for the entire scale.

#### ***Pilot study:***

Pilot study was done on a small sample of baccalaureate students and interns representing about 10% of the study sample to test the study tool in terms of clarity, and the time required to be filled out. The subjects involved in the pilot study were not included in the main study sample.

#### ***Fieldwork:***

The researcher met with the students and interns who met the criteria for inclusion, explained to them the aim and procedures and invited them to participate. The researchers then started the actual process of data collection. Those who agreed were handed the data collection tool and instructed on how to fill it out. The time to fill out the form was approximately 25 minutes. The researchers were present all the time for any clarification. The fieldwork lasted for approximately three months from September to November 2012.

#### ***Administrative and Ethical considerations:***

An official approval was obtained from the Faculty of Nursing, Zagazig university. Participants were informed of the purpose and procedures. They

were given full explanations of the benefits of the study, as well as their rights to refuse or withdraw at any time without giving reasons. The researcher assured them about the confidentiality of the data, and the data collection forms were anonymous.

#### **Statistical analysis:**

Data entry and statistical analysis were done using SPSS 16.0 statistical software package. Quantitative data from scale were compared using the non-parametric Mann-Whitney test. Spearman rank correlation was used for assessment of the inter-relationships among quantitative and ranked variables. Statistical significance was considered at  $p\text{-value} < 0.05$ .

#### **Results:**

All the recruited 100 students and 124 interns completed the forms, with 100% response rate. The majority of the samples were females (90.2%), and their age ranged between 20 and 25 years (**Table 1**). About two thirds (67.4%) of students and interns were single, and 57.1% got "very good" grade in their last academic year.

**Table (2):** demonstrates that the mean and median scores of all four subscales and the total score of do not show statistically significant differences between the students and interns. In both, the scores are higher for the subscales of searching for alternatives and canvassing objectives/values. The medians range between 3 (corresponding to 60% of the maximum score) for the subscale of searching for information and unbiased assimilation of new information among students and 3.3 (corresponding to 66% of the maximum score) for the subscales of searching for alternatives and

canvassing objectives/values among interns.

The influences of respondents' gender and marital status on their perception of decision-making are presented in **tables (3) and (4)**, respectively. It is evident that none of these two factors had any statistically significant effect on their perception. The median total scores are equal for males and females (3.16) and almost equal for single (3.18) and married (3.15) respondents.

Similarly, respondents' age and academic grade achievement had no influence on their perception of decision-making. As **table (5)** illustrates, no statistically significant correlations could be shown between any of the subscales or the total scale and respondents' age and grade.

Concerning the correlation matrix of decision making subscales scores, **Table (6)** demonstrates statistically significant weak positive correlations between the subscale of searching for alternatives and each of the subscales of canvassing objectives/values ( $r=0.192$ ) and of evaluating/re-evaluating consequences ( $r=0.143$ ). Also, the subscale of canvassing objectives/values had a statistically significant weak positive correlation with the subscale of searching for alternatives and canvassing objectives/values ( $r=0.188$ )

#### **Discussion:**

Clinical decision making is a professional skill that nurses ought to master. The present study findings demonstrate that final year nursing students and nurse interns do not differ much in their perception of this skill although it was thought that these latter would have higher scores. Both groups have average clinical decision-making

scores. The decision-making subscales of searching for alternatives and of canvassing objectives/values seem to be better perceived by students and interns.

Both nursing students and nurse interns of the current study had decision making scores around the middle of the scale, signifying that their responses to the scale items were mostly “sometimes.” These responses reflect some degree of uncertainty of their perception of these items, leading to the choice of the middle or “neutral” point of the scale. Therefore, the respondents’ perception of decision-making is rather uncertain, with slight tendency towards the positive end of the scale, especially for the first two subscales. Therefore, some authors recommend the use of “forced-choice” even-numbered scale to avoid this tendency towards the neutral choice.<sup>(20)</sup>

The close proximity of the scores of students and interns might have a number of explanations. Firstly, for students the decision-making process might seem easier due to the more comfortable situation during training, where the process is done in simulated situations with no serious consequences of the decision taken. This is very important for giving students a certain comfort in practicing their nursing role of decision-making.<sup>(6)</sup> On the other hand, nurse interns often work under stress and with no opportunity for practicing their decision-making skills. This stress has a negative impact on their clinical decision making abilities and perception.<sup>(21)</sup>

A second explanation of the lack of difference between nursing students and nurse interns’ perception of decision-making might be related to the tool used in measuring this perception. In fact, a systematic review

of the tools measuring the perception of the decision-making process demonstrated that these tools do not assess perception within specific clinical encounters. Thus, none of them measures the change over time. The authors highlighted the need for further methodological development in this area to provide more responsive instruments.<sup>(22)</sup>

A last possible explanation is the close proximity in age and secular time between the two groups, which may minimize any possible temporal change in their perceptions and skills. Added to this is the adoption of innovative training approaches in the undergraduate curriculum, with use of simulations close to real life situations. Thus, students enter the internship program with smooth rather than abrupt transition from theory to practice. In congruence with this, Secomb et al.,<sup>(10)</sup> showed a positive impact of training nursing students by simulation on their clinical decision-making abilities.

The lowest scores of the current study participants’ perception were in the subscale of searching for information and unbiased assimilation of new information. It also had no or low correlations with the other subscales. This might be attributed to the problem of lack of resources our students and nurse interns are faced with. They have no open access to recent literature and research work, which is crucial for the completion of the process of clinical decision-making and evidence-based practice. Additionally, they need more training in research and in critical appraisal of the literature. In agreement with this, Gagnon et al.,<sup>(16)</sup> stressed that the nursing curricula do not give emphasis to evidence-based nursing research, with consequent poor basic research

abilities, and negative effect on future nurses' clinical decision-making. Therefore, training nurses in research, computer and information technology skills need to be fostered in undergraduate nursing curricula.<sup>(23)</sup> Proficiency in this area may well enhance their psychomotor and organizational competencies.<sup>(24)</sup>

The present study could not identify any influence of respondents' age, gender, marital status, or academic achievement on their perception of clinical decision-making. This might be attributed to the low heterogeneity in most of these characteristics in the sample with narrow ranges of age and academic achievement. The lack of gender difference in decision-making perception is incongruent with previous literature showing that women are more concerned with uncertainty, doubts, and the dynamism that are involved in the decision, while men assign more importance to the analysis of the information required to carry out the decision.<sup>(25)</sup> Also, men prefer rational reasoning while women prefer intuitive reasoning.<sup>(26)</sup> The lack of differences in the present study might be attributed to the relatively recent start of admission of male students in the nursing career in Egypt, a career considered to be feminine for long time. This might have offset any possible gender differences.

#### **Conclusion and recommendations:**

The study concludes that final year nursing students and nurse interns have average clinical decision-making with no difference in the perceptions of the two groups. Their personal factors have no influence on this perception.

In the light of the main findings of current study the following recommendations are suggested:

The faculty of nursing should give more emphasis on the development of clinical decision-making skill in undergraduate curricula and in internship programs, with provision of needed resources for research and evidence-based practice. Further research is suggested for identification of the factors that may improve or impede the development of this skill among nurses.

**Table (1): Socio-demographic characteristics of nursing students and interns in the study sample (n=224)**

Items	Frequency	Percent
<b>Group:</b>		
▪ Students	100	44.6
▪ Interns	124	55.4
<b>Age (years):</b>		
▪ <22	99	44.2
▪ 22+	125	55.8
<b>Range</b>	20-25	
<b>Mean±SD</b>	21.4±1.1	
<b>Sex:</b>		
▪ Male	22	9.8
▪ Female	202	90.2
<b>Marital status:</b>		
▪ Single	151	67.4
▪ Married	73	32.6
<b>Grade:</b>		
▪ Good	19	8.5
▪ Very good	128	57.1
▪ Excellent	77	34.4

**Table (2): Comparison of decision making scores between nursing students and interns**

Items	Mean±SD	Median	Quartiles		Mann Whitney Test	P-value
			1 <sup>st</sup>	3 <sup>rd</sup>		
<b>Searching for alternatives:</b>						
▪ Students	3.25±0.37	3.20	3.00	3.50		
▪ Interns	3.28±0.35	3.30	3.10	3.50	.997	.319
<b>Canvassing objectives/values :</b>						
▪ Students	3.28±0.38	3.20	3.03	3.50		
▪ Interns	3.28±0.32	3.30	3.00	3.50	.422	.673
<b>Evaluating/re-evaluating consequences :</b>						
▪ Students	3.15±0.38	3.10	2.90	3.30		
▪ Interns	3.07±0.36	3.10	2.80	3.30	1.406	.160
<b>Searching for information and unbiased assimilation of new information :</b>						
▪ Students	3.11±0.40	3.10	2.90	3.38		
▪ Interns	3.07±0.40	3.00	2.80	3.30	.649	.517
<b>Total decision making :</b>						
▪ Students	3.20±0.24	3.18	3.03	3.33		
▪ Interns	3.17±0.20	3.15	3.03	3.28	.352	.725

**Table (3): Comparison of decision making scores among nursing students and interns according to their gender**

Items	Mean±SD	Median	Quartiles		Mann Whitney Test	P-value
			1 <sup>st</sup>	3 <sup>rd</sup>		
<b>Searching for alternatives :</b>						
▪ Male	3.29±0.30	3.25	3.08	3.60		
▪ Female	3.27±0.37	3.20	3.00	3.50	-.322	.747
<b>Canvassing objectives/values :</b>						
▪ Male	3.20±0.33	3.25	2.90	3.50		
▪ Female	3.29±0.35	3.20	3.10	3.50	-.893	.372
<b>Evaluating/re-evaluating consequences :</b>						
▪ Male	3.18±0.27	3.20	3.00	3.30		
▪ Female	3.10±0.38	3.10	2.80	3.30	-1.278	.201
<b>Searching for information and unbiased assimilation of new information :</b>						
▪ Male	3.12±0.30	3.10	2.90	3.23		
▪ Female	3.08±0.40	3.05	2.80	3.30	-.607	.544
<b>Total decision making :</b>						
▪ Male	3.20±0.17	3.16	3.06	3.29		
▪ Female	3.18±0.23	3.16	3.03	3.30	-.428	.668

**Table (4): Comparison of decision making scores among nursing students and interns according to their marital status**

Items	Mean±SD	Median	Quartiles		Mann Whitney Test	p-value
			1 <sup>st</sup>	3 <sup>rd</sup>		
<b>Searching for alternatives :</b>						
▪ Single	3.26±0.36	3.20	3.00	3.50		
▪ Married	3.29±0.36	3.30	3.00	3.55	-.445	.656
<b>Canvassing objectives/values :</b>						
▪ Single	3.27±0.36	3.20	3.00	3.50		
▪ Married	3.30±0.31	3.30	3.05	3.50	-.673	.501
<b>Evaluating/re-evaluating consequences:</b>						
▪ Single	3.12±0.38	3.10	2.90	3.30		
▪ Married	3.08±0.35	3.10	2.80	3.30	-.828	.407
<b>Searching for information and unbiased assimilation of new information :</b>						
▪ Single	3.09±0.40	3.10	2.90	3.30		
▪ Married	3.07±0.39	3.00	2.80	3.40	-.236	.813
<b>Total decision making :</b>						
▪ Single	3.18±0.23	3.18	3.03	3.30		
▪ Married	3.19±0.21	3.15	3.03	3.30	-.226	.821



**Table (5): Correlation between decision-making scores and subjects' age and grade**

Items	Spearman rank correlation coefficient	
	Age	Grade
Searching for alternatives	.018	-.055
Canvassing objectives/values	-.003	.061
Evaluating/re-evaluating consequences	-.094	.069
Searching for information and unbiased assimilation of new information	.029	.032
<b>Total decision making</b>	<b>-.027</b>	<b>.030</b>

**Table (6): Correlation matrix of decision making subscales scores**

Items	Spearman rank correlation coefficient			
	Searching for alternatives	Canvassing objectives/values	Evaluating/re-evaluating consequences	Searching for information and unbiased assimilation of new information
▪ Searching for alternatives				
▪ Canvassing objectives/values	.192**			
▪ Evaluating/re-evaluating consequences	.143*	-.016		
▪ Searching for information and unbiased assimilation of new information	.069	.188**	.108	

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