

Individual-Social Effective Factors on Clinical Decision Making in Nurses

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ABSTRACT: Clinical decision- making is a vital element in nurses' professional performance and it makes professional nurses distinct from non- professional personnel in medical care unit. Making clinical decisions by the nurse may affect crucially on therapeutic trend and achieving the expected clinical finding as well as rising satisfaction among patients. The clinical decision making by nurses influences in quality of medical care more than any other factor and process of clinical decision making may contribute to identifying patients' requirements and determination of the best nursing effort. The present study is aimed at review the individual- social effective factors on way of nurses' participation in clinical decision making process. This investigation is a descriptive- analytical research, which has been carried out as a case study on 285 nurses from medical training centers affiliated to Tabriz University of Medical Sciences. Data gathering tool in this study included a checklist from personal information and Participation in Decision Activities Questionnaire (PDAQ). The collected information was analyzed by SPSS.15 statistical software. Results came from this study showed that clinical decision making by nurses significantly related to variables of age ($p=0.003$), gender ($p=0.001$), working unit ($p=0.002$) type of employment, and work background ($p=0.025$) from statistical aspect; however, no significant relationship was statistically obtained with education degree in nurses ($p>0.05$). Given that clinical decision- making is considered as a vital component in nursing professional practice, improving the nurses' ability for participation in clinical decision making will be one of the important goals in this profession so that with respect to the findings and by taking these effective variables, one may improve way of nurses' participation in clinical decision making process; thus, it is suggested to employ proper managerial techniques as well as to adopt educational strategies to enhance clinical decision making.

Keywords: Individual- Social Factors, Decision Making, Nurses

INTRODUCTION

Today, with respect to nursing responsibilities and the wide practical extent of this field and necessity of making proper and crucial decisions in nursing services, nurses should be able to judge in clinical vital situations and making decision for survival in complex circumstances (Nafea et al., 2007). Clinical decision making is a process of critical thinking in selection of the optimal practice to achieve the given goals. Decision should be made when several alternative options are purposed and or one of them may be practical. Thus, a variety of plans should be evaluated and the appropriate decision should be made in certain condition (Berman et al., 2008).

No one can ignore the impact of properly and on time decision making by nurses on accelerated treatment process for patients and further addressing them as well as lowering of therapeutic costs. In some countries and medical centers, researchers' experiences in this field

suggest that rather than above- said cases, nurses' properly and on time decision making has caused facilitation and improvement in properly use of human resources and materials and it was followed by improvement in medical care quality. Similarly, researches indicate that lack of properly and on time decision making may postpone treatment and medical care for patients and expose them to some problems (Adib Hajbagheri et al., 2003).

Several factors can influence in individual and collective decision making process where such factors may be internal or external. Internal factors comprise of some variables such as spiritual and physical mood, personal characteristics, and values, past experiences, interests, knowledge and attitude. External factors also include environmental conditions and time. At the same time, individual values may affect all aspects of decision making ranging from definition of problem to way of evaluation (Akhund Zade et al., 2007).

Nursing care is often presented frequently; therefore, in the case of occurrence any new condition and exposure to new experiences, it necessitates for nurse to be able to meet efficiently and effectively medical care requirement for patient and to take duly measure for identifying the problem (Crisp et al., 2005). Over the time, with respect to acquisition of experience from achievements and failures for patient treatment, nurse may obtain ability to acquire skills for clinical decision making during employing of knowledge and experience and making decision on different circumstances, which are considered as the paramount task in nursing job. In 21st century, thinking is required to take an approach toward addressing personnel's participation and at the same time improving occupational discipline as well as encouragement of a systematic attitude and enhancement of communication. By taking the existing issues in the field of nurses' participation in decisions making, it seems necessary to examine nature of participation in decision making for nurses within their workplaces (Noori Tajer et al., 2007).

The present study has been conducted by aiming at review individual and social effective factors on clinical decision making among nurses, who were employed in medical educational centers from Tabriz University of Medical Sciences.

MATERIALS AND METHODS

This investigation is a descriptive- analytical case study that examines way of nurses' participation in process of clinical decision making. In this study, statistical population includes nurses, with Associate-Bachelor- Master's Degrees, who are employed in internship and surgical units, ICU and CCU at medical education centers affiliated to Tabriz University of Medical Sciences with at least 1 year working experience in nursing, where they were excluded from managerial tasks (matrons- supervisors and nursing services managers). Research environment consists of internship and surgical units, ICU and CCU at medical education centers in Tabriz University of Medical Sciences. Sampling was done by means of classified random method from 285 qualified nurses. Information gathering tool in this study is a checklist consisting of personal- social information and Participation in Decision Activities Questionnaire (PDAQ) for nurses, which made up 12 questions with 3 choices where total score of any field ranged from 0 to 60.

By considering the aforesaid questionnaire, way of participation in clinical decision making was examined at three steps; namely, how nurses participate in tasks of identifying the problem, evaluation of the suggested solutions, and selection of the best choice as solution for the given problem.

To determine scientific validity of this tool, Content Validity was adopted; and to verify reliability or scientific confidence of data gathering tool, Test- Retest method was employed and value ($r=0.87$) was obtained.

The needed ethical principles for research task were observed in this study as follows: Before starting study, the present research was approved by Committee of Ethics in Research from Tabriz University of Medical Sciences. The required permission and recommendation letter were taken from the respective researching authorities. Privacy of study was met by non- writing full names of research participants in questionnaire. Similarly, voluntary nature of participation was confirmed in this study and purposing of results to research center if participants requested for it.

Data were acquired from this study by descriptive statistical methods (frequency- percentage and mean $\pm$ standard deviation), parametric and non-parametric tests of mean difference for independent groups, Chi- Square relation test or Fisher's Exact Test and Spearman's Correlation Coefficient and they were analyzed by SPSS.15 statistical software. In this study, p- value lesser than 0.05 was statistically considered as significant. Normality of data distribution was assessed by Kolmogorov- Smirnov test.

RESULTS

91.2% of studied samples were female participants and 8.8% of them were males in this survey. With respect to the current research, concerning to variable of clinical decision making, the maximum mean score belonged to males (115.16 ± 24.6) and the minimum mean score has been reported as (83.99 ± 43.9) in females. And also the studied female and male nurses have shown a significant difference ($p=0.001$) in terms of clinical decision making by using Mann- Whitney U Test.

The majority of sampled participants included 32.6% at age group (26-30) while the minority of samples (2.1%) was at age group (46-50). The minimum and maximum ages were 22 and 46 respectively and mean $\pm$ standard deviation values were equal to (31.91 ± 5.82) year. With respect to these investigations, according to age (118.1 ± 43.7) the maximum mean score for variable clinical decision making belonged to group age (46-50) while the minimum mean score for variable clinical decision making based on age (71.3 ± 43.9) has been observed in age class (20-25). Of course, result of our study showed that rate of clinical decision making has differed significantly within various age groups ($p=0.003$). Review of results came from Spearman's Correlation Test indicated that there is statically significant relationship among clinical decision making and nurses' age ($p=0.003$). Most of nurses (72.6%) had roughly less than 10 years of working experience; the minimum rate of working experience (3.2%) has belonged to higher than 20

years work background. In terms of way of participation in clinical decision making, the maximum mean score (96.77 ± 38.61) belonged to participants with more than 20 years work experience while the minimum value of mean score (83.17 ± 44.37) was attributed to nurses with less than 10 years work experience. During several decades of work career, rate of clinical decision making has differed significantly ($p=0.025$); in other words, the longer rate of work experience a nurse had, the more he/ she has participated in clinical decision making. Regarding education level, the majority portion of studied nurses (97.9%) had Bachelor's degree and only (1.1%) of nurses had Master's degree and also (1.1%) of them had Associate's degree. In terms of way of clinical decision making based on education, the maximum mean score (122.66 ± 33.6) was attributed to nurses with MA degree and the minimum rate of mean score (86.22 ± 43.5) belonged to nurses with BA degree. By conducting Kruskal- Wallis Test, variable of way of participation in clinical decision making has not significantly varied at various educational levels ($p=0.39$).

From employment status aspect, the majority of the studied nurses (32.3%) were contractual employees while

the minority of their group (17.5%) has been employed casually. With respect to our review on result, the maximum mean score in variable of way of participation in clinical decision making (96.96 ± 37.9) has been observed in contractual employed group of nurses. The minimum value of mean score in variable of way of participation in clinical decision making (69.76 ± 49.2) has been seen in casually- employed nurses. Result of study indicates that way of participation in clinical decision making for type employment has differed significantly by means of Kruskal- Wallis Test ($p=0.005$). Similarly, variable of way of participation in clinical decision making has been most frequent among "contractual" employment group than all of them and after this group the given attribute is more frequent among official employees and then employees by agreement and casual employees at last step, respectively. Pairwise comparison among groups showed that there was significant difference in mean scores among officially employment and casual and contractual employments in terms of statistics ($p=0.002$ $p=0.38$). No significant difference existed among other groups to each other.

Table 1: The relationship among individual- social characteristics and score of clinical decision making variable

Individual- Social Characteristics		Percentage	Mean & Standard Deviation of Decision Making Criterion	Type of Test	Statistical Significance Level
Gender	Female	91.2	115.16 ± 24.6	Mann- Whitney U Test	$p= 0.001$
	Male	8.8	83.99 ± 43.9		
Age Group	20-25	14.4	71.3 ± 43.9	Spearman's Correlation Test	$p= 0.003$
	26-30	32.6	83.4 ± 43.9		
	31-35	28.1	88.6 ± 43.4		
	36-40	15.4	95.7 ± 39.5		
	41-45	7.3	95.2 ± 41.1		
	46-50	6.1	118.1 ± 43.7		
Work Background	<10	72.6	83.17 ± 44.37	Spearman's Correlation Test	$p= 0.025$
	11-20	24.2	96.08 ± 40.03		
	>20	3.2	96.77 ± 38.61		
Work Unit	Internship	36.8	90.28 ± 38.4	Kruskal- Wallis Test	$p= 0.002$
	Surgery	24.6	82.72 ± 42.5		
	ICU	31.2	78.23 ± 49.4		
	CCU	7.4	118.28 ± 25.0		
Education Level	MA	1.1	122.66 ± 33.6	Kruskal- Wallis Test	$p= 0.39$
	BA	97.9	86.22 ± 43.5		
	AA	1.1	97.66 ± 28.5		
Employment Status	Official	28.4	90.35 ± 44.2	Kruskal- Wallis Test	$p= 0.005$
	Casual	17.5	69.76 ± 49.2		
	Contractual	32.3	96.96 ± 37.9		
	By Agreement	21.8	80.48 ± 40.8		

The major part of studied nurses (36.8%) was working in internship unit while the minor group of them (7.4%) was employed in CCU. In terms of way of clinical decision making based on unit in workplace, the maximum rate of mean score (118.28 ± 25.0) belonged to CCU ward and the minimum value of mean score (78.23 ± 49.4) was

attributed to ICU ward. Way of clinical decision making has significantly differed in various working sectors ($p=0.002$). In conducting the comparison between the existing mean scores among groups by Kruskal- Wallis Test, it was shown that variable of way of participation in clinical decision making was at highest level than all

groups. Pairwise comparison among groups indicated that difference of mean score obtained from questionnaire of way of clinical decision making by nurses in CCU ward is significantly related to internship ward ($p=0.031$), surgery/operation unit ($p=0.005$) and ICU ($p=0.001$).

Table 1 shows the relationship among individual-social characteristics and score of clinical decision making.

DISCUSSION

The acquired results have suggested that there is a significant relationship among nurses' clinical decision making with age, gender, working unit, work background and type of employment. No significant statistical relationship was observed among education degree and nurses' clinical decision making.

Regarding gender, of course during recent years more responsibilities have been assigned to females and women possessed higher creativity for decision making in clinical participation than males and men have been preceded in participation trend of clinical decision making than women. Studies on relationship among gender and participation in decisions have been followed by different results. In a study conducted by Noori Tajer et al. (2004) on matrons, they indicated that men have more participated in decision making than women (Noori Tajer et al., 2007). But in an investigation that was done by Livar (1998), the maximum participation clinical decision making has been reported for females and gender was mentioned as one of the effective factors on rate of participation in clinical decision making. He states that being aware of decision making various techniques is useful in keeping and maintenance of workforce so that during the recent years researchers have found that women might feel sense of responsibility more than men and reflect greater power of creativity of them. Thus if they are given more opportunity and attention in the cases of decision making, then they may play one of their administrative roles better i.e. nursing role versus patients. Alternatively, study done by Scott (2001) has shown that gender has not been significantly related to participation in clinical decision making. The result came from study of Hancock HC et al (2006) has reflected that gender is related significantly to participation in decision making by nurses and women have been benefitted from greater participation in making decisions in his study.

Concerning to age, result of our study has indicated that rate of clinical decision making differs significantly among various groups ($p=0.003$) so the reason might be due to increasing in work experience and more participation in decision making trend. Meanwhile, the study done by Noori Tajer et al. (2004) showed that the lowest percent of clinical participation (41.4%) has occurred in age group greater than 43. According to

viewpoint from Carey (2000), as age increases, the clinical participation is reduced by nurses.

Regarding to variable of work background, rate of clinical decision making has differed significantly during several decades ($p=0.025$) and although work experience is increased over the time, the rate of participation in clinical decision making is also improved. Therefore, one may refer to some reason such as increase in work experience in this survey. In a study that was carried out by Noori Tajer et al. (2004), they showed that matrons with more than 24 years work experience have considered their own participation in decision making process at low and average levels. Michailova et al. (2000) indicated that work background has no effect on decision making for clinical participation. But on the other hand, Griffiths et al. (2002) argue that due to increase in experience and more acquaintance with working problems, with increase in serving background the personnel may show more inclination to participation in decision making and become useful in making decisions. Parsa Yekta et al. (2005) also found this fact that using from others' experiences may play crucial role in formation of their clinical competencies especially in several areas like clinical decision making where such experiences are mainly acquired from observation of colleagues' activity and hearing their working events. Potter and Perry argue that nurse may not allow thinking trend to become as a routine. It is required that nurse to start constantly dealing with review and identifying new experiences.

Rate of clinical decision making does not significantly vary at different education levels ($p=0.39$). But Adib Haj Bagheri et al. (2004) showed that education degree has been one of the major effective factors on nurses' clinical decisions. Although, the maximum participation for decision making occurred within elder group in our study, no significant relationship was seen among education level and clinical decision making. Also Huber (2000) remarked that adequate knowledge and skill are two important factors for participation in decision making. He mentioned that as knowledge is improved, the rate of individuals' participation is increased in decision making. Milstead et al. (2006) have implied education level as an influential factor for way of decision making in nurses. Different results of this study are derived from low size of this group in the studied units.

Result of our study has shown that rate of clinical decision making has been significantly differed in type of employment ($p=0.005$). Noori Tajer et al. (2007) found that in official matrons group the highest percent of head nurses (41.3%) have participated in decision making process at average level, and rate of participation in group of matrons who employed by agreement was at low level while among casually- employed matrons, rate of participation has been at lowest (never at all) level. It seems as we approach from casual group's side more to

by- agreement, contractual and official employed groups, rate of participation is improved further in clinical decision making. These findings may be acquired due to increase in their work background and experiences in nursing work group. Marquees et al. (2000) have interpreted that due to sense of occupational security at higher level, officially employed nurses are more inclined to participate in decision making and planning. These personnel possess higher satisfaction and commitment and lesser stress and anxiety to their own work.

Regarding results came from workplace unit way of participation in clinical decision making has been at highest level in CCU ward. But no significant difference was observed between scores of variable of nurses' clinical decision making in emergency units with general units. In another study, Whelan (2007) concluded that nurses' clinical decision making is significantly different from their working units so our study also confirms this issue.

For empowerment and development of clinical decision making skill in nurses and finding appropriate strategies, each of nurses, professional organizations, employer institutions for nurses and the government have a common task and responsibility. They should recognize the existing barriers and provide some conditions in the given organization, which could be facilitator for independence of action and clinical decision making by frontline for giving services. Thus, in the course of above results, it is suggested to adopt properly managerial methods including employment of male nurses for crucial and critical care as well as experienced nurses along with young nurses in order to use their experiences and leading casual and by- agreement workforce toward official manpower and at the same time taking educational strategies to improve knowledge of nurses for decision making.

It is suggested to take great stride toward improvement of clinical decision making by nursing authorities (supervisors and matrons) via properly management and put experienced nurses along with young nurses within different wards to use their experiences and to support from younger nurses by experienced nurses.

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REFERENCES

Adib Hajbagheri M, Salsali M, Ahmadi F. (2003). The factors facilitating and inhibiting effective clinical decision making: A qualitative study. *Education in Medical Science Iranian Magazine*, 1(1), 5-13. [Persian]

- Akhund Zade K, Hosseini A, Salehi Sh . (2007). [Critical thinking and clinical decision making in Nursing]. 1st ed, Esfahan, Esfahan Medical Science publisher, 104-162. [Persian]
- Berman A, Aynder, Sh. J, Kozier B. Erb G. (2008). *Kozier & Erb's Fundamentals of Nursing concept, Process and Practice*, 8th ed. Newjersey: Pearson; 168. 1)
- Nafea A. Lakdizaji S. Oshvandi, K. Fathiazar E. Ghajazade M. (2007). Comparison of critical thinking among nursing students. *Tabriz nursing & midwifery journal*, (2)6: 4-9. [Persian]
- Carey L. (2000). *Practice nursing*. 1st ed. London: Baillier Tindall, 85-92.
- Crisp J, Taylor C. (2005). [Potter & Perry's Fundamental of Nursing]. translated by: Asadi Noghabi A, Shiri M, Asadi M, Zebardast J. 1st ed, Tehran, Boshra publisher, 42-50. [Persian]
- Griffits LP. (2002). Geared to achieve, With lifelong learning. *Nursing Management*, 33(11): 22-25.
- Hancock HC, Easen PR. (2006). The decision-making processes of nurses when extubating patients following cardiac surgery. *International Journal of Nursing Students*, 43: 693-705.
- Huber D. (2000). *Leadership and nursing care management*. 2nd ed. Philadelphia: W.B Saunders Company.
- Marquise BL, Huston CJ. (2003). *Leadership roles and management functions nursing: Theory and application*, 4th ed, Philadelphia, Lippincott Willia and Wilkins, 29-32.
- Michailova S. (2000). When common sense become uncommon: Participation and empowerment in Russian and Bulgarian organization. Available from: <http://www.ebs.DK/Centers/cees/network/pdf2000/michailova.pdf>. Accessed: June 2002.
- Milstead, J.A. , & Furlong, E. (2006). *Handbook of nursing leadership: Creative skilss for a culture of safety*, 1st ed. Sudburg, MA: Jones & Bartlett, 116-117.
- Noori Tajer M, Mahfooz Poor S, Noori Nejad F. (2007) Collaborative decision making among head nurses in educational health centers of Iran medical science universities. *Scientific-Research Health Management Quarterly*, 10(26): 7-14. [Persian]
- Parsa Yekta Z., Ramezani Badr F., Khatooni A. (2007). Nursing students\ viewpoints about their clinical competencies and its achievement level. *Iranian Journal of Nursing Research*. 1(3): 20-25.
- Prescott P.A., Dennis K.E., & Jacox A.K. (2001). Clinical decision making of staff nurses. *Journal of Nursing scholarship*, 19(2), 56-62.
- Whelan, J. (2007). A necessity in the nursing world: The Chicago Nurses Professional Registry, 1913-1950. *Nursing History Review*, 13: 49-57.