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Examination of Clinical Decision Making Perceptions of Nursing Students

Abstract

In the study, clinical decision making perceptions of students who had clinical practice experience were evaluated. The sample was 210 nursing students. Data were collected through the Clinical Decision Making in Nursing Scale. There were significant differences between total scale score and three subscale scores of nursing students. According to one-year follow-up results, it was found that pre-graduation clinical decision making perception scores of students were low. For all of the classes, there is a need to implement different education methods which will elevate students' perceptions of making clinical decisions in accordance with their developmental properties and to evaluate their results.

Keywords: *decision making, nursing education, nursing students, Turkey.*

Introduction

Decision making is one of the skills that should be acquired by individuals. Decision making includes intelligence, intellectual and cognitive activities; it is a complex structure and requires the use of the critical thinking skill (Taşcı, 2005).

Clinical decision making is defined as selecting the most appropriate, useful, effective and acceptable action among those envisaged for the solution of problems of individuals and families or putting it into practice (Thompson, Dowding, 2002). In clinical decision making in nursing, the nurse should analyze the data related to the clinical situation of the patient, describe the problem, provide care by determining effective and useful interventions out of goal-oriented alternatives, comprehend

the social and emotional difficulties of the patient and the family during the care and reflect this to the care (Tanner, 2006; Azak, Taşcı, 2009). Making a correct and timely decision is of great importance in improving the quality of nursing care and providing safe care to society. Clinical decision making perceptions of nurses are affected by their individual characteristics, critical thinking skills, theoritical and practical knowledge, decision making environment and situation as well as practical experience (Sucu, Dicle, Saka, 2011). Thus, World Health Organisation recommended that *"programmes of nursing schools should provide the students the skill of critical thinking and clinical decision making"*(World Health Organization, 2009). American Association of Colleges of Nursing (AACN) reported that "*an undergraduate programme should prepare graduates to make correct decisions in order to provide a high quality nursing care*" (AACN, 2008). Clinical decision making is one of the fundamental skills to be acquired by students in the nursing education.

In consideration of the research into clinical decision making perceptions, it was reported in the study conducted by Jenkins (1983) with seniors, juniors and sophomores that their total scores of Clinical Decision Making in Nursing Scale (CDMNS) and scores of three subscales were similar. However, it was detected that the scores of the subscale "search for alternatives or options" were significantly different. It was stated that the difference resulted from the subscale scores of seniors. Bynes and West (2000) evaluated the clinical decision making perceptions of undergraduate nursing students in Australia. It was found that the CDMNS scores of the students were moderate in all the subscales except in the subscale of "search for information and unbiased assimilation of new information," in which their decision making perceptions were high. Baumberger-Henry (2005) evaluated the effect of four different education methods applied to nursing students in the USA. There was not a significant impact of education methods on the CDMNS scores (155.13±12.52; 152.04±10.90; 154.77±13.83 and 156.16±11.38). In the study conducted by Krumwiede (2010), The CDMNS scores of senior nursing students was found to be 147.99±10.19. It was evaluated that the subscale scores of "search for alternatives or options", "canvassing of objectives and values", "evaluation and reevaluation of consequences" and "search for information and unbiased assimilation of new information" were 37.04± 2.81; 38.00±3.92; 36.19±3.22; 36.76±3.037 respectively. Girot (2000) compared the clinical decision making perception scores of nurses and nursing students in England. In this research, the CDMNS score of seniors was found to be 147.21±11.05. It was evaluated that the subscale scores of "search for alternatives or options", "canvassing of objectives and values", "evaluation and reevaluation of consequences" and "search for information and unbiased assimilation of new information were 37.32±2.91; 35.84±2.81; 37.26±4.75;

36.79±2.94 respectively. There was no significant difference between the CDMNS and subscale scores of students and nurses. It was found out that the CDMNS and subscale scores of nurses were similar to those of seniors (Girot, 2000).

In the studies found in the literature, it is generally seen that the CDMNS score levels of nursing students were 156.16 and 147.99. However, in the Turkish literature there is no study evaluating the clinical decision making among undergraduate nursing students. This research was carried out to evaluate clinical decision making perceptions of undergraduate nursing students by using the CDMNS. It was thought that the results of this research would provide data for the evaluation of clinical decision making perceptions, which is deemed necessary as a result of nursing education both in Turkey and in the world.

In this research, answers were sought to the following questions:

1. What are the clinical decisions making perceptions of sophomores, juniors and seniors?
2. When juniors are examined longitudinally, what is the development in the pre-graduation clinical decision making perceptions?

Methods

Type and Place of Research

This is a descriptive, cross-sectional and analytical study. The research was conducted in 2010 in a nursing school where an integrated curriculum programme was applied and a problem-based learning (PBL) education model was used. PBL model is a student-centered method where the student assumes responsibility for learning and the educator acts as a guide. Sophomores and juniors analyze the problem given in the scenario prepared for the targets of integrated curriculum in the PBL session. Seniors received 24-hour internship practice, a four-hour theoretical PBL session and two-hour elective courses a week in the fall and spring terms. In the PBL session, the students tried to analyze a real case and one of their experiences/problems via a reflective approach.

Research Sample

The research was conducted on the undergraduate nursing students receiving education in the school of nursing. The research sample consisted of 216 nursing students who were sophomores (n: 63), juniors (n:83) and seniors (n: 70) with clinical practice experience. Freshmen were not included in the research sample as they did not have any clinical practice experience.

Selection and Description of Participants

The research was carried out at two stages. At the first stage of the research, data were collected from the students through the CDMNS. 210 students filled in the scale completely in the research. 6 students were excluded from the sample as they did not fill in the CDMNS completely. In this study, Power calculation based on the research data was made by using one way ANOVA test and total scale score was found out to be 0.86 (alpha: 0.05, CI: 95 %, assumed SD: 10.42; assumed mean difference: 7.23).

At the second stage of the research, clinical decision making perceptions of the juniors were evaluated longitudinally three times. The first measurement was carried out at the end of the third-grade, the second measurement was performed at the beginning of the fourth-grade and the third measurement was performed at the end of the fourth-grade during the internship period, one week before the graduation. This follow-up is of critical importance as it shows the impact of internship practice performed by the juniors in the fourth-grade on the clinical decision making perceptions. The impact of group differences was examined with the longitudinal examination of the same group students. With the longitudinal examination of the students, an answer was sought to the change in their pre-graduation clinical decision making perceptions. In the research, data were collected from 80 juniors. 45 students were reached in the follow-up of the next year and data were collected. 35 students were excluded from the research since 25 students did not take part in the study and 10 students could not fill in the scale correctly. Only 56.3 % of the students were reached.

Research Ethics

Approval was received from the ethics committee of the nursing school for the research and permission was obtained from the management of the nursing school for practice. The objective of the research and confidentiality of the data were explained verbally to the students and it was also made clear that they could leave the research whenever they wanted. Verbal and written approval was obtained from the students who accepted to participate in the research voluntarily.

Data collection tools

The data of the research were collected with the use of the "descriptive characteristics" consisting of three questions and the "CDMNS". The CDMNS was applied to the students upon completion of the clinical practice and students answered the scale themselves.

The Clinical Decision Making in Nursing Scale (CDMNS)

The CDMNS was developed by Jenkins (1983) in America for nursing students. This scale describes the clinical decision making perceptions of nursing students on the basis of their own expressions (Jenkins, 2001). In the original study where the scale was developed, the scale items were evaluated by educators specialised in undergraduate nursing education in terms of content validity and the items on which a consensus was reached were included. It was stated that Cronbach's alpha value of the original scale was 0.83 and four factor structure explains the 72.3 % of total variance in the explanatory factor analysis (Jenkins, 1983).

The CDMNS consists of 40 items and four subscales. The subscales of the scale are "search for alternatives or options", "canvassing of objectives and values", "evaluation and reevaluation of consequences", "search for information and unbiased assimilation of new information". Each subscale comprises 10 items. The CDMNS is a five-point Likert-type scale (1=never to 5=always). 18 items of the scale are reversed and the options range from never to always. The total scale score varies between 40 and 200. Each subscale score varies between 10 and 50. There is no cutting point. A high score from the scale indicates a high decision making perception while a low score demonstrates a low and negative decision making perception (Jenkins 1983; Jenkins, 2001).

In Turkey, a reliability and validity study of the CDMNS was carried out by Durmaz and Dicle (2012). Cronbach's alpha value of the CDMNS which was adapted into Turkish was 0.78, while item total correlation coefficients of the scale items were found between 0.139–0.565. A confirmatory factor analysis showed that the scale had a consistent factor structure with the original scale. Thus, the items with low correlation were not excluded from the scale upon the suggestions of specialists (Durmaz, Dicle, 2012).

Data Evaluation

Data were evaluated with the use of statistical software programmes. CDMNS total and subscale scores were examined by classes with the use of One-Way ANOVA and Tukey HSD test. At the second stage of the research, One-Way ANOVA for Repeated Measures at repetitive measurements and t test at Bonferroni corrected paired samples were used for CDMNS total scale and subscale scores evaluated by following one year later among juniors.

RESULTS

The mean age of the students was 21.13 (±1.07) years where 28.6% of the students were sophomores (n:60), 38.1% of the students were juniors (n:80) and 33.3 % of the students were seniors (n:70). Table 1 shows the comparison of the CDMNS and subscale scores of the nursing students at the first stage of the research.

The students' scores of CDMNS and their scores in the subscales of "search for alternatives or options", "canvassing of objectives and values", "evaluation and reevaluation of consequences" were examined and the difference was found to be significant. On the other hand, the students' scores in the subscale of "search for information and unbiased assimilation of new information" were found to be similar and the difference among them was insignificant (Table 1).

A further analysis (Tukey HSD) was performed to determine which class accounted for the difference between the students' total CDMNS and subscale scores. A significant difference due to the juniors was determined between the CDMNS scores of the sophomores and juniors. However, the difference detected in the subscale of "search for alternatives or options" was attributed to he sophomores; the difference detected in the subscale of "canvassing of objectives and values" and that of the subscale of "evaluation and reevaluation of consequences"was attributed to the juniors (Table 1). The CDMNS scores of the juniors were found out to be higher than the other classes.

At the second stage of the research, clinical decision making perceptions of the students were monitored longitudinally for two years (Table 2). When the development levels of the students were examined longitudinally, the differences between the scores of CDMNS and the scores in the subscales of "canvassing of objectives and values", "evaluation and reevaluation of consequences", "search for information and unbiased assimilation of new information" were found out to be significant. The scores in the subscale of "search for alternatives or options" were determined to be similar and the differences between them were insignificant.

Further analysis (Bonferroni) was carried out in order to determine difference between the total CDMNS and subscale scores obtained following the longitudinal follow up of the students. It was determined that the difference between the CDMNS scores resulted from the scores of the juniors. The difference in the subscale of "canvassing of objectives and values" also resulted from the scores of the juniors, while the difference in the subscale of "evaluation and reevaluation of consequences" was found out to result from the pre-graduation scores of the seniors. Finally, the difference in the subscale of " search for information and unbiased assimilation of new information" was attributed to the scores of the juniors (Table

2). It was observed that the scores obtained by the juniors were higher than those the same students obtained in the final year.

Table 1. Examination of nursing students' CDMNS and subscale scores

The CDMNS and Subscale	Score			F	p
	Sophomores (n:60) X±SD	Juniors (n:80) X±SD	Seniors (n:70) X±SD		
Search for alternatives or options	38.95±3.57	41.42±3.16	41.01±3.23	10.48	0.00*
Canvassing of objectives and values	38.86±3.19	40.91±3.15	39.28±3.19	8.39	0.00*
Evaluation and reevaluation of consequences	38.95±3.85	40.72±3.61	39.81±3.58	4.04	0.01*
Search for information and unbiased assimilation of new information	40.13±3.6	41.07±3.17	40.28±2.74	1.91	0.15
CDMNS total	156.90±11.11	164.13±10.17	160.40±9.98	8.40	0.00*

*α: 0.01

Table 2. Longitudinal examination of nursing students' CDMNS and subscale scores

The CDMNS and Subscale	Score by Years			F	p
	Juniors (n:45) X±SD	Seniors (n:45) X±SD	Pre-graduation (n:45) X±SD		
Search for alternatives or options	41.64±3.03	41.33±2.98	39.95±4,42	2.70	0.07
Canvassing of objectives and values	40.64±3.10	37.86±3.14	37.20±3,14	32.28	0.00*
Evaluation and reevaluation of consequences	40.68±3.35	41.86±3.94	38.93±6,20	4.44	0.01*
Search for information and unbiased assimilation of new information	41.08±3.09	38.66±2.94	36.64±4.17	27.88	0.00*
CDMNS total	164.06±9.76	159.73±9.52	152.80±15.87	17.23	0.00*

*α: 0.01

Discussion

First Stage

In the research, the CDMNS scores of the students were examined by classes. In general, the scale and subscale scores of the students were found similar among the juniors and seniors. However, significant differences were found between the scale and subscale scores of classes. A significant difference was also detected among the total scale scores as well as the subscales of "canvassing of objectives and values" and "evaluation and reevaluation of consequences". It was seen that the difference resulted from high clinical decision making perceptions of the juniors. On the other hand, the difference detected in the subscale of "search for alternatives or options" originated from the sophomores who had low scores. A significant difference could not be found among the scores of the subscale of "search for information and unbiased assimilation of new information". The scores obtained by the students in three classes in this subscale were similar. Students are expected to search for the necessary information since clinical practice environment is also a learning environment. Thus, the scores of students can be similar. The results of this research could not be discussed due to the insufficiency of data in our country. However, when compared to the study conducted by Jenkins (1983), it was found that scale and three subscale scores were identical by classes. The researcher reported that the difference was significant only in the subscale of "search for alternatives and options" and it was attributed to the seniors.

However, in this research, the difference between the classes in the subscale of "search for alternatives or options" results from the sophomores, who had the lowest score. In spite of this, there was no difference between the scores of the juniors and seniors. Since the sophomores work in the clinic for the first time, provide care to a limited number of patients, have difficulty in coping with new situations that they experience and also have difficulty in clinical decision making, their CDMNS scores may be low.

However, it is seen that the juniors gain experience in providing care to several patients in clinical practice and perceive themselves stronger and more competent in making correct decisions for problems of patients. Besides, the fact that the juniors study with their educators might have affected their decision making process in a positive way. On the other hand, in the fourth-grade internship practice, the students assume responsibility that is almost identical to that of a nurse, the number of patients varies between 12 and 16 and they need a lot of information that they should learn in the PBL model. It is thought that seniors lack the skill of making the correct critical decision to determine the effective interventions for

patient problems as they cannot meet all of these requirements at a time. This can explain why the clinical decision making perceptions of the seniors were similar to those of the juniors.

The scores of the students participating in this study (160.40±9.98) were higher than the scores of the students participating in the studies conducted by Girot (2000), Baumberger-Henry(2005) and Krumwiede (2010). In the PBL programme, students are made to learn the skills of developing hypotheses in face of new situations, determining learning requirements, doing research and selecting the correct and necessary information. We think that the students developing these skills have improved clinical decision making perceptions. These results may imply that the PBL programme develops clinical decision making perceptions of students.

Second Stage

At this stage, the CDMNS scores of the juniors were evaluated following the start of the fourth-grade education and just before graduation in order to examine how their clinical decision making perceptions were affected in the upper grade. Significant differences were detected between the students' total scale scores as well as their scores in the subscales of "canvassing of objectives and values", "evaluation and reevaluation of consequences", "search for information and unbiased assimilation of new information". However, a significant difference could not be found between the students' scores in the subscale of "search for alternatives or options". At the end of further analysis, it was detected that the difference resulted from the scores of the juniors in the "total scale scores" as well as the subscales of "canvassing of objectives and values", "search for information and unbiased assimilation of new information". It was also determined that the difference in the subscale of "evaluation and reevaluation of consequences" resulted from the pre-graduation scores of the seniors.

The CDMNS scores obtained by the students when they started to receive education in the fourth-grade and before graduation were found to be lower than their scores in the junior grade. In the pre-graduation internship period, students provide care to 12–15 patients and assume responsibility similar to that of a real nurse. Students can evaluate themselves as incompetent while exerting efforts to adapt to this new situation. In the study conducted by Girot (2000), there was no difference between the scores of nurses and seniors. The findings of Girot's study (2000) show similarity to the pre-graduation decision making scores of the students in our study. In another research, it was reported that inexperienced nurses cannot detect changes concerning the situation of the patient and cannot identify details (Taylor, 1997). Since intern students consider themselves as newly

recruited nurses, their decision making perceptions may be low. Furthermore, it is possible that the CDMNS scores were not high as seniors see nurses as role model in practice. This situation relies on the limited nature of learning based on education and experience.

Conclusion

It can be concluded that decision making perceptions of sophomore nursing students develop, clinical decision making perceptions of juniors improve as they develop the skill of managing 2–3 patients independently in the clinic and seniors evaluate their decision making perceptions lower due to the increase in their requirements in face of different clinical cases encountered in the internship practice. When the juniors were followed-up for a whole year, their clinical decision making perceptions reduced in the fourth-grade. The increase in the number of patients in the final year as well as the increase in responsbilities might have caused the students to consider themselves as incompetent. In all of the three classes, there is a certain need for implementing different education methods that will promote students' clinical decision making perceptions in accordance with their developmental characteristics and evaluating the results both quantitatively and qualitatively.

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