



The Effect of Clinical Instruction based on Mentorship Patterns on Clinical Competencies of the Nursing students

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ABSTRACT

In line with resolving the problems in the face of the clinical education, including the low level of the graduates' skills and in regard of the acquisition of the required skills and capabilities in the end of the nursing clinical education course and considering the necessity for making use of novel methods of clinical education for enhancing the quality of the clinical instructions, the present study has been designed to evaluate the effect of clinical education planned according to mentorship pattern on the clinical learning of the nursing students as compared to the common methods of clinical education. The present study is a quasi-experimental research featuring two groups, named pretest and posttest. The study sample volume was comprised of 52 nursing students who had been selected based on a census method and assigned randomly to four control groups and two experimental groups. Each group was consisted of 6-7 individuals. After the implementation of the cognitive skills' pretests, the students from the control groups and the students from the experimental groups were subjected to two weeks of clinical education based on conventional methods and mentorship-based methods, respectively. In the end, the students' cognitive skills and behavioral skills were examined using checklists. The study findings indicated that mentorship-based instruction is effective on the enhancement of the cognitive skills. The mean scores of the experimental groups' cognitive skills as well as their behavioral skills were found significantly higher than the control group in the post tests and for all of the cases. The clinical qualifications of the experimental group students were also significantly higher than the control group students. The mentorship-based instruction method more than the conventional method leads to the enhancement of the nursing students' competencies. Thus, it is suggested that the method can be applied in clinical instruction.

Key words: Nursing Education, Clinical Education, Mentorship-Based Instruction, Clinical Competencies

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INTRODUCTION

Nursing education includes theoretical instruction processes and the clinical education is one necessary and important practical part of nursing education [1]. It seems that the existence of some shortages in this part has caused the theoretically

learnt materials to distance away from the practically learnt materials and the gap has been

found gradually enlarged and deepened between the education and treatment [2]. On the other hand, there has always been this discussion that the nurses who have graduated recently lack the sufficient skill for performing the clinical tasks [3] as it has been demonstrated in the study by Taghva'ei [4] that 56.1% of the managers from various levels of nursing services rate the clinical versatility of the graduates lower than expected. The insufficient skill of the newly-graduated nurses exerts and adverse effect on the whole population and leads to the wastage of time and energy and presses the hospital. On the other hand, the issue of insufficient skill more than anything leads to harmful effects for the patients [3].

More than 50% of the educational programs of the nursing courses are pertinent to clinical education [4]. The planners of nursing education know the clinical instruction as the most genuine part of nursing education [5]. Clinical instruction is a solution through which the nurses can achieve clinical competencies but, unfortunately, the results of the studies by the nursing education researchers are indicative of the idea that the clinical instruction quality is not so much favorable countrywide and there are shortfalls therein [6]. Although the necessity for revising the clinical apprenticeship has been underlined in a great many of the studies, but, due to the complexity of the issue in the clinical environment, only a few researchers have allowed themselves to investigate the teaching and learning in this environment and propose methods for improving it [7]. Nowadays, a great many of the clinical instructors are seeking for educational methods by way of which the clinical knowledge and skill can be taught to the university students in an appropriate level [9]. Clinical instruction planned based on mentorship pattern [10] for the college instructors is one novel educational system in which the attainment of an optimum performance of the expected clinical role is intended. It is difficult for the instructors going to the hospitals along with the university students to understand the routines, policies, guidelines, procedures and special methods of hospitals in some cases; and, on the other hand and in the status quo of the affairs in our country, some nursing personnel of the hospitals do not know participation in the instruction of the students as part of their duty and, additionally, sometimes refrain from making the required cooperation for instructing the nursing students and do not provide them with the required facilities and equipment and fail to cooperate with the university students in taking care of the patients and communicating their experiences with them in the absence of the instructor [11]. According to the insufficient efficiency of the graduates in clinical actions, the lack of constant availability of the instructor to the students in some cases [1] and the lack of personnel's cooperation in regard of clinical instruction matters [2], there is a need for making changes and reformations in the clinical instruction methods. One clinical instruction method that can improve the above-mentioned problems is the mentorship model. In this plan, a nurse is appointed as an instructional assistant in every section to teach the clinical experiences to the students and meanwhile shouldering the

responsibility of providing service as a personnel member of the hospital performing his or her main role directly supervises the university students after making coordination with the college instructor [2]. The clinical instruction peer is the person responsible for the patient in every respect [7] and also for the student [8]. The clinical instruction peers engage in clinical instruction of the students for 2-3 work shifts during a week at the same time with doing their main responsibilities [7] and the final evaluation is carried out by the instructor and the clinical instruction peer [9].

That how much the model is effective in elevating the students' learning level is disputable [12].

According to the insufficient efficiency of the nursing graduates, the unavailability of the appropriate educational atmosphere, the need for the constant existence of instructor in common methods of clinical education, insufficient cooperation of some sectors in education affair, the inappropriate way of some staff members' way of treating the students and lack of supporting them in the absence of the instructor and the students' worries in directly working on the patients as well as parallel to the increase in the grounds of cooperation between the education and treatment centers and considering the scarcity of the researches on this education model in the country, the researcher, taking into account the history of the mentorship model, decided to evaluate the effect of this model on the nursing students' clinical learning as compared to the conventional methods.

MATERIALS AND METHODS

The present study is a quasi-experimental research performed based on a two-group pretest and posttest design.

The independent variable of the study was composed of the two methods of clinical education, including the mentorship-based instruction and conventional instruction and the dependent variable was consisted of the nursing students' clinical qualifications in hemodialysis ward that were obtained through evaluating their learning mentorships (cognitive and behavioral skills).

The data collection instrument of the study was the cognitive skill test and behavioral skill checklist. First of all, the adjusted Delphi Technique was used to determine the instruction-expected

mentorships in the hemodialysis ward. It can be stated in a brief description of Delphi method regarding the determination of the instruction-expected mentorships during apprenticeship period that several instructors who were involved in instructing the university students in the hemodialysis ward and several matrons and some well-experienced nurses of the ward with work histories of over three years were asked to write down in three rounds the mentorships important and necessary in regard of the nurses working with the patients in hemodialysis annotated by their own ideas and opinions regarding the students' apprenticeship in this ward. After making summarizations, the ideas and notions were again sent to the same individuals for reaching to a consensus and, finally in the end of the third round, a total of five sets of important mentorships were agreed upon that are explained below as the instructional mentorships in the area of important behavioral activities in the hemodialysis ward following which the activities of each area were identified: a) setting the apparatus, including ten activities, b) preparing the hemodialysis device, including 12 activities, c) finding the correct vessels for hemodialysis through fistula, including 18 activities, d) launching the hemodialysis and connecting the patient to the device, including 23 activities, e) termination of hemodialysis and disconnecting the patient from the device, including 32 activities.

As it was mentioned, to carry out the present study, the entire study population that was comprised of 52 nursing students in their eighth semester and working during day shifts in an apprenticeship course in hemodialysis ward as an intensive care unit were selected from the nursing-obstetrics faculty of Orumia University during the education year of 2017-18 based on census method (due to the smallness of the study population). Then, the university students were asked to attend a meeting in which the study objectives were explained to them and they were assured that their information will remain confidential and finally consent letters were acquired from them for participation in the study. The students were randomly assigned to four groups based on random numbers' table. Next, out of the four groups, two were randomly specified as the control and the other two were labeled experimental group. In order to make sure that the students from each of the two groups possess identical capabilities, the pretest was conducted in the same meeting using the researcher-constructed cognitive skills test.

Every instruction program was consisted of 14 days of apprenticeship in hemodialysis ward beginning from eight in the morning till two in the afternoon. Based on the preset schedule, the program was initiated since October, 2017, based on conventional method of teaching in the hemodialysis ward of Orumia's Taleghani Hospital for the first two groups (control groups each containing seven individuals) and after the same instructor declared preparation, the mentorship-based instruction was begun in the mid-December of the same year. The students' learning progress evaluation papers were made available to the instructor and the hospital peer for both of the intervention groups (each containing six individuals). The students from both of the two groups were instructed by one of the researchers who was also the instructor of the hemodialysis ward, as well. The students' behavioral skills were evaluated using checklists designed by the same instructor through observation of the students' behaviors on the last day of the apprenticeship in the hemodialysis ward. Upon the termination of the instruction program, the posttest was conducted for all of the students with the same cognitive skills test.

The validity of the cognitive and behavioral skills tests was investigated using the face and content validity examinations followed by the exertion of the required revisions. To determine the reliability of the cognitive skills, there was made use of Cronbach's alpha coefficient ($r=0.78$) and then simultaneous observation by two observers who had been previously given the necessary instructions was the method of choice for testing the reliability of the behavioral skills checklist. They, independently, observed and registered the behaviors of five students when working with the hemodialysis patients and according to the calculated correlation intensity ($r=0.93$), the behavioral skills evaluation checklist was found as well enjoying an acceptable reliability.

SPSS software, version 21, was employed to analyze the data. The scoring method was as described in the following words: at first, every correct reply in the tests pertaining to the cognitive skills was given a score equal to one and the rest of the replies were scored zero and, finally, the total scores of all the replies to the questions were summed to acquire the total score of every student. To investigate the behavioral skills at the end of the instruction course, there was made use of a behavioral skill checklist to test the students in five

domains. The students were given a score equal to one in case that a correct behavior was observed and zero in the otherwise cases. Then the whole scores were summed o obtain a total score for each student in five areas of behavioral skills. The clinical competency scores of the students was the sum of the cognitive skills scores and the behavioral skills scores obtained in the posttest.

RESULTS

All of the students continued their cooperation till the termination of the study. The girl students accounted for the largest percentages of all the groups (between 57% and 58%). The students' average age in the control group was 24.28 ± 1.89 in the control group and 23.5±1.08 in the experimental group.

Table 1. comparing cognitive skill rates in control group students with experimental group students after the implementation of conventional teaching method and mentorship-based teaching method

Studied group	Control	Experimental
Cognitive skill level		
Mean and standard deviation after the implementation of instruction program	18.57±5.74	24.58±2.93
Statistical test result*	P<0.01	

There was not observed any significant difference between the groups in terms of age, gender, work years, having kidney failure requiring dialysis in a family member, relatives and interestedness in continuing the job. Before the implementation of the instruction, the mean and the standard deviation scores of the control group students' cognitive skills was 17.71±5.81 and the mean and the standard deviation scores of the experimental group students' cognitive skills was 15.91±6.40 and no significant difference was observed in statistical regards and both of the groups were identical (P>0.05). After the implementation of the conventional method of teaching and mentorship-based instruction, a significant difference was observed between the cognitive skills scores (table 1) and behavioral skills in all of the five areas (table 2) as well as between the total, mean and standard deviation scores of the nursing students' clinical competency in the group taught based on the conventional method (control group, 102.42±9.68) as compared to the mentorship-based taught group

(113.75±8.62) (table 3) (P>0.05). Thus, the study hypothesis indicating the effect of mentorship-based teaching method on the clinical competency levels was confirmed.

Table 2. comparing the behavioral skill levels of the students from control group with those of the students from experimental group after the implementation of conventional teaching method and mentorship-based teaching method in five areas and in general

Behavioral skill levels	Mean and standard deviation of the scores		Statistical test results*
	Control	Experimental	
a) Setting the device	8.57 ±0.41	9.33±0.28	P<0.01
b) Dialysis device preparation	10.21±0.47	11.16±0.36	P<0.01
c) Finding the right vessel for hemodialysis through fistula	15.64±0.58	16.41±0.59	P<0.01
d) Starting hemodialysis and connecting the device to the patient	20.92±0.48	21.58±0.58	P<0.01
e) Termination of hemodialysis and disconnecting the device from the patient	28.12±0.69	29.33±0.72	P<0.01
Total sum of the scores	83.48±2.63	87.81±3.03	P<0.01

Table 3. comparing the clinical competency levels of the students from control and experimental groups after the implementation of the conventional teaching method and mentorship-based teaching method

Studied group	Control	Experimental
Clinical competency level		
Mean and standard deviation	102.42±9.68	113.75±8.62
Statistical test result*	P<0.01	

*In the tables, the means and standard deviations of the tests are for just providing the reader with the required information and they are not used for the tests. Mann-Whitney's U-test was used in the two groups' test results of the mean values.

DISCUSSION

The results of the present study indicated that instructing the nursing students from hemodialysis wards based on mentorship teaching methodology can exert a significant influence on their cognitive and behavioral skills. Moreover, it was made clear in comparing mentorship-based teaching method

with the conventional methods of instruction that the latter has a larger deal of effect on the learning of cognitive and behavioral skills by the students. Thus, the study hypothesis, indicating the effectiveness of the mentorship-based teaching method on the clinical competency (cognitive and behavioral skills) of the nursing students, is supported. The results of the present study are consistent with the results obtained in various studies [13] that are suggestive of the idea that “mentorship-based instruction” is also effective on continuous education [14], dentistry instruction [15] and medical students’ instruction [16] in Malaysia, as well. Also, the mentorship-based instruction was undertaken in Dundee Medical University, in Scotland and in the UK, as well, as a case study [17&18] and it was found out through experiences gained from a six-year use of the method in Dundee University that the instructors are quite interested in the implementation of this teaching method [19]. In a study aiming at preparing and implementing a lesson on communicative skills for teaching 67 junior dentistry students, the researchers dealt in three stages with the determination of the essential mentorships for the dentists, creation of a mentorship-based lesson and finally its implementation. The study results indicated that the total class scores of the second course (mentorship-based group) were higher than the first course [20].

CONCLUSION

The mentorship-based instruction method, as compared to the conventional method, exerts a higher level of influence on the enhancement of the students’ clinical competency. The obtained results support the study hypotheses indicating the effectiveness of the mentorship-based instruction in teaching nursing students.

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