

*Original Article***Effect of end-of-life care education on the attitudes of nurses
in infants' and children's wards**

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Abstract

BACKGROUND: Infants palliative care becomes an important aspect of nursing when providing welfare and promoting children's life quality are the objectives of care. The number of children with life threatening diseases has increased alongside the developments in technology and medical treatment in medicine. It is a pure fact that our attitudes are related to our behaviors and performances. This research was conducted with the aim of assessing the effect of intensive course of children's palliative care on the attitudes of children and infants' nurses in Isfahan University of Medical Sciences.

METHODS: This was a quasi-experimental, two-group and two-stage study in which 56 nurses working at Infants' and children's wards who met inclusion criteria were divided into experiment and control groups. The participants of experiment group attended in the infants' palliative care training course which lasted for 3 weeks. A reliable and already validated questionnaire of Infants and Children Wards Nurses' Attitudes Regarding the Dying Children was used before and after training.

RESULTS: There was no significant difference between the two groups regarding demographic characteristics, except for marital status which was found the study findings were not confounded by it. There was a significant difference between mean test and re-test scores in the experiment group and also between the mean scores of control and experiment groups after training. There was no significant difference between mean scores before and after training in the control group.

CONCLUSIONS: End-of-life children care is one of the issues in modern medicine which has not gained a definite status in Iran. It is hoped that nurses would be the forerunners of this modern science in Iran.

KEY WORDS: Education, child care, children, nurses, attitude.

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Nurses are the largest group of the treatment team who are responsible for taking care of the dying patients. This duty also includes the nurses working at infants and children wards. Since children are quantitatively and qualitatively a substantial portion of community, and are the central elements of the social structure, they form the most sensitive and vulnerable social group.¹ Some researchers stated that current century deserves to be no-

minated as the child age because a significant portion of researchers' material and intellectual resources are devoted to study this group.² There has been a high constant attention to the mortality rate of infants so that it is one the most important health indicators in the society which not only indicates the health condition of children, but the health of all people and the socio-economical conditions of their lives as well.³ It is estimated that more than 400,000 oth-

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er children living in US have a life-threatening disease. Fortunately, in recent years, there has been an appropriate attention to the requirements of children who have an incurable disease. America's Children Association has recently ratified a law about palliative care for the purpose of homogenizing children care.⁴ Similarly, the number of these children has increased alongside the developments in technology and medicinal treatments.⁵ In case a nurse is willing to take care of this kind of patients, any event would bother them and affect their emotions severely because this care is not similar to any other life experiences for them.² All nurses who are engaged with taking care of dying patients need to reflectively ponder over their feelings toward death as it is crystal clear that our attitudes are related to our behavior and performance⁶⁻¹⁰ and the nurses' attitudes toward death and dying affect their nursing care.^{11,12} Since taking care of dying patients involves more complexities than other patients, having a positive attitude toward death leads to a more effective performance from the nurses' side while taking care of dying patients and their family.⁸ Most universities do not have training confrontation with death as a separate training course.⁹ Although, most of the studies conducted in all countries, have discussed the students' and nursing personnel's attitudes toward taking care of the dying patient but no study has been done on nurses' attitudes in infants and children wards with regards to taking care of a dying child. With regards to aforementioned issue and religious and cultural differences about death and dying between Iran and other countries, the present research has been conducted with the aim of assessing the effect of training on the nurses' attitudes in taking care of dying children at infants' and children's wards. Its objective is to answer this question that whether nurses' training has any effects on their attitudes in taking care of dying children in infants and children wards and if cultural and religious differences can yield different results from all other studies.

Methods

This quasi-experimental, two-group, two-stage research was conducted in direction of the Nursing and Midwifery Department and under the supervision of the Ethical Committee of Isfahan University of Medical Sciences. The research population in this study consisted of all the nurses (Muslim and Shiite) working in infants and children wards of Al Zahra, Shahid Beheshti, and Seyedo Shohada Hospitals, not losing a close relative or an intimate friend in the past year. Since the number of social and relief workers was very low in the mentioned wards, this group was omitted from the study and only the female nurses with Bachelor's degree were considered. The number of this population was 183 at the beginning of the study. After getting help from a statistics advisor, the number of the intended samples was estimated 22 individuals in each group which was then increased to 30 individuals due to the probability of the samples' quitting the study resulting in a total sample size of 5 individuals in each group. The sampling was done proportionally, with an accidental allocation within 2 weeks by taking help from a research colleague. The accompanying researcher alongside with the research colleague referred to the intended wards of the purported hospitals in different working shifts and called the qualified individuals to cooperate according to the proportion of each hospital. After getting all the individuals' consents, the list of all the participants was provided, and a number was allocated to each one. Then, all the numbers were placed inside a bag and 30 numbers were randomly taken out of the bag. This group was chosen as the experiment group. The experiment group participated in training sessions related to taking care of dying children but, the control group did not take part in any classes. The researcher received the shift-working schedule of the experiment group and divided the participants into two groups of 1 and 2 considering their working shifts, then, the training sessions were planned and participants were invited to the sessions by sending invitation cards. The sessions were held weekly by having 15 individuals in 3 sessions. A commuting transportation service was considered

to minimize the probability of absences at the sessions. It was tried to arouse the positive view of the participants regarding the training sessions right from the first session so that the participants would be willing to attend the sessions later. As a result, throughout the first two sessions, the first advising professor who was a PhD in psychology accompanied the researcher and during the training sessions, techniques of lecturing, group discussion, questioning and answering and implementing the colleagues' experiences were used. The participants filled out the questionnaire immediately after the completion of the intervention.

In order to collect the data, the main standard questionnaire, FATCOD, was used to design the "Questionnaire for Assessing the Nurses' Attitudes at Infants and Children Wards Regarding Care of the Dying Children" which contained 30 questions; 15 were positively and 15 were negatively oriented. In order to organize the scores in this questionnaire, the Likert Scale, with scorings range of 0 to 5, was used in which the individuals stated their varying degree of consent, including "extremely disagree, disagree, no idea, agree and extremely agree". Thus, the acceptable range of scores was 30 to 150; 30 as the most negative attitude and 150 as the most positive attitude. Nurses were recommended to fill out the questionnaire in a relaxed environment, away from any tension, having access to the researcher or his colleague in order to remove any ambiguity about the questions.

In order to make this measurement valid and applicable for the nurses of infants' and children's wards, the content validity method was used. The questionnaire was evaluated by 16 faculty members of the infants and children department and nurses in infants' and children's wards, a professor of Psychiatric-nursing de-

partment and a PhD in Psychology. Their recommended changes were enforced. In order to measure the scientific reliability of the measurement, a two-week test-retest method was employed. The mentioned questionnaire was filled out by 12 nurses in infants' and children's wards of Al Zahra Hospital and the total agreement coefficient of 0.65 was attained. In addition, at the end of this research, the Cronbach's Alpha was also measured (0.7). Besides, participants filled out the demographic data questionnaire.

In order to analyze the data, the SPSS software, version 11.5 was used to conduct the descriptive and inferential statistics. In order to compare each group before and after the study, the Paired t-test and to compare both groups, the Independent t-test was used.

Results

The age range of the participants was from 20 to 50 years and the mean age of all nurses was 32.66 years. As it is shown in Table.1, the mean age in the experiment group was 33.74 ± 7.19 years and 31.59 ± 4.43 years in the control group. The majority of the individuals in the control and experiment groups consisted of nurses with a working record of 5 to 20 years. As it is seen in Table 2, both groups did not have any significant difference regarding the age and working record.

But, regarding the marital status, 37% in the experiment group and 65.5% in the control group were married. The result of the chi square showed that the distribution of individuals in the experiment and control groups was different regarding the marital status ($p < 0.05$). Consequently, this variable was separately examined due to the possibility of distorting the results. Accordingly, the average of the point

Table 1. The demographic features of participants in control and experiment groups and the results of the chi-square test

Variable	Group	Group	P value
	Experiment	Control	
Age	33.74	31.59	0.188
Working record	9.33	8.72	0.670
Married	37%	65.5%	0.033

Table 2. Comparing the difference of mean scores of pre-post tests among single and married individuals and the results of the co-variance analysis.

Marital Status Difference	Single	Married	Student t Test		
			P value	df	T
Mean	8.2	5.3	0.341	51	-0.962
Point difference before and after			ANCOVA		
			0.003	2	F=6.403
Standard deviation	9.4	12.7			

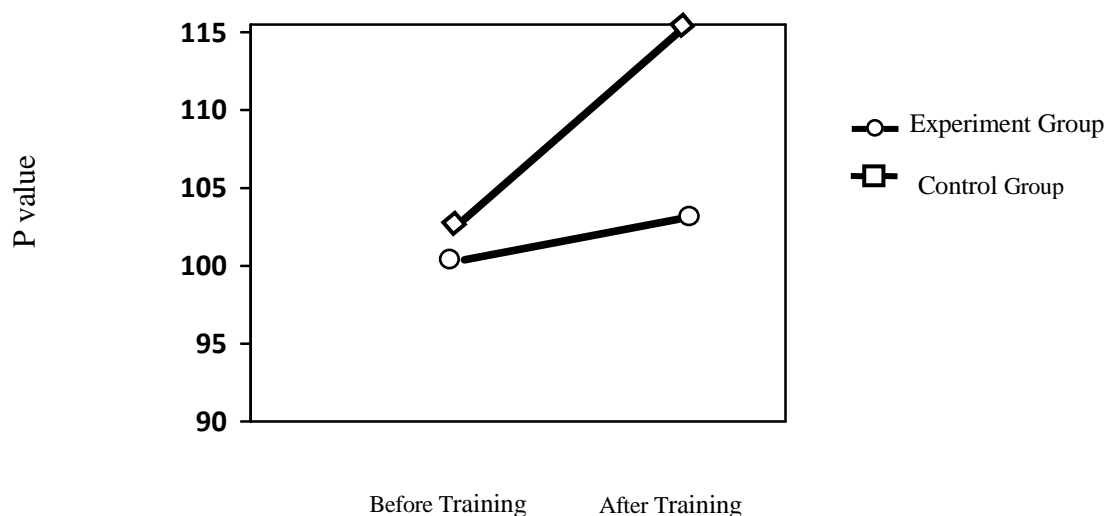
difference before and after was calculated for single and married individuals which was 5.3 ± 12.7 in the married and 8.2 ± 9.4 in the single individuals and the coefficient of $p=0.341$ was obtained from the Independent t-test done to assess the difference of score before and after the test not showing any significant difference in the score of single and married individuals. Moreover, through the conducted test of Co-variance, the marital status variable was controlled due to its confounding effect and it was found that by omitting the factor of marriage, the before and after the test results would be still significant.

Other field variables like work place, graduated university, and the number of confronta-

tion with a dying child were also assessed with no statistical difference. In Table 3 and Figure 1, the difference of the obtained scores from the questionnaire is presented both before and after training in two groups. As it can be seen, there is no significant difference between the mean scores before training in the control and experiment groups ($p = 0.295$). Also, no significant difference was observed between the mean scores before and after training in control group ($p=0.395$) but, there was a significant difference between the mean scores before and after the test in the experiment group, and also mean scores after training in both control and experiment groups revealed a significant difference ($p = 0.000$).

Table 3. The difference of nurses' attitudes score average in both groups before and after training

Variable	Experiment Group	Control Group	P value
Before Training	102.59	99.48	0.295
After Training	114.44	101.45	0.000
P value	0.000	0.395	-----

Figure1

Discussion

The results of this study showed that training in taking care of dying children affects the nurses' attitude in infants and children wards. The Paired t-test was used to fulfill the first minor research goal, i.e. the identification of mean score of nurses' attitude in infants' and children's wards toward the death of patients before and after training in taking care of the dying children, and also to compare the mean scores of nurses' attitude toward taking care of the dying child before and after training in the experiment group, not showing a significant difference ($p < 0.05$). This means that nurses' attitude toward taking care of the dying children in the experiment group was increased at the end of the study compared to the time before the study. The results of the present study are consistent with all other studies (Mallory,¹⁵ Barrer et al.¹³ and Frommelt¹⁴).

In a study conducted in 2003 by Mallory under the title of "the effect of the training course of palliative care on the attitudes of B.S students of nursing toward taking care of the dying patients", the average scores in the pre-test in the experiment group was 119.82 ± 9.40 and in the post-test, it was 126.07 ± 11.04 and the results were significant ($p < 0.001$) which are consistent with the collected data in this research.

In a study by Frommelt in 2003 conducted on aiming to assess the effect of the training program on the attitude of nurses toward the dying patients and their families, the experiment group participated in a training course which lasted about an educational semester. Mean score of nurses' attitude in the experiment group increased from 118 up to 129.8 ($p < 0.05$) and in the control group, the mean score increased from 115.8 up to 114.7 ($p > 0.05$). The difference of the mean score was significant in the experiment group, consistent with the present study.¹⁴

In order to attain the secondary research goal, i.e. the identification of the point average of the nurses' attitude regarding the death of patients before and after training in taking care of the dying children in the control group, and to compare the mean score of the nurses' atti-

tude, the Paired t-test was used which did not yield a significant difference ($p > 0.05$). This means that the nurses' attitude toward taking care of the dying children in the control group was not changed at the end of the study compared to the time before intervention.

These findings showed that post-test mean scores of the participants slightly enhanced in the control group. Although it was not significant, this could be ascribed to the effect of questioning the nurses' attitude toward taking care of the dying children before intervention, which was also done for the control group, on their attitude. Hence, the researcher could not exert any control over such a mental sensitivity. Due to the impossibility of blinding for the intervention, the participants were inevitably informed about being under study and this effect was not preventable and controllable.

In order to attain the third subsidiary research goal, i.e., the determination and comparison of mean scores of the nurses' attitude in infants and children wards regarding the death of the patients before being trained in taking care of the dying children at the experiment and control groups, the Independent t-test was used. The result of this test did not show any significant difference ($p > 0.05$) and this means that the nurses' attitude regarding taking care of a dying child did not have any difference in both the experiment and control groups before training.

In order to attain the fourth subsidiary research goal, i.e. determination and comparison of the nurses' attitude point average at infants' and children's wards regarding the death of patients after the training course for taking care of a dying child in the control and experiment groups, the Independent t-test was used and the result of this test showed a significant difference ($p < 0.05$). This means that the attitude of nurses toward taking care of the dying child in the experiment group was improved in the experiment group which revealed different results from Mallory, 2003. The researcher interpreted the reason for such a difference as: in Mallory's study, the increase of the score before and after was almost 7

points but, in the present research, this increase is scored 12 which could be justified by considering the lower mean score and the better effect of training on it. This reason is resulted in the significance of score difference of Post-test in both groups. The control and experiment groups showed difference regarding some demographic features which could have resulted in the non-significant scores difference while in the present study; the groups were similar to each other with respect to all features and were different only for their marital status which did not confounded the findings.

With respect to the demographic status of the nurses participated in this study, the researcher believes that the participating nurses in this study have a lot of similarities with the working personnel in infants and children wards of the medical science universities all over the country but, since this research has been conducted in university-based hospitals, it is recommended that more caution is adopted when generalizing the results of the study to infants and children nurses in all other hospitals and embark on more research in this area.

The results of this study showed the importance of planning for training courses in taking care of dying children for nurses working at infants and children wards. The findings of this research supported all the hypotheses and also were consistent with the

results of the previous studies. The findings showed that if nurses of infants and children wards participate in training courses for dying child, they will have a more positive attitude about taking care of these children. The results of the study also supported the previous international requirements, through which it was required to place the end-of-life training among the nurses training syllabus. In the researcher's view, after the cancer wards, the infants and children wards are among the wards that their personnel need more training.

Taking care of end-of-life children is one of the issues in modern medicine for which a distinct status has not been defined in Iran yet and nurses are hoped to be the forerunners of this modern science in Iran.

The authors declare no conflict of interest in this study.

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