

Original Paper

Effect of Workshop Training on Nursing Students' Knowledge and Attitude Regarding Children's Privacy Protection: A Quasi-experimental Study



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ABSTRACT

Introduction: Hospitalized children are exposed to privacy violations due to low knowledge of patient rights in healthcare providers especially nursing students. Training on how to respect the privacy of child patients by practical methods such as workshop training may affect the knowledge and attitude of nursing students.

Objective: This study aimed to determine the effect of workshop training on the knowledge and attitude of children's privacy protection in nursing students from Rasht, north of Iran.

Materials and Methods: This quasi-experimental study was conducted in 2023 on 54 nursing students from the School of Nursing and Midwifery, Guilan University of Medical Sciences, Rasht, Iran. They were randomly allocated into two groups of control (n=28; received routine training) and intervention (n=26, received one-day workshop training). Their attitudes and Knowledge were assessed before and after training using researcher-made children's privacy knowledge and attitude scales. Data analysis was performed by using descriptive (Mean±SD, frequency, percentage) and inferential statistics (Pearson correlation test and analysis of covariance). P<0.05 was considered statistically significant.

Results: The mean age of the students was 22.62±1.53 years in the control group and 22.96±1.57 years in the intervention group. The majority of them were female (55.6%); 53.6% in the intervention group and 57.7% in the control group. Before the intervention, no significant difference was found between the two groups in the scores of attitudes and knowledge. After the intervention, the mean scores of attitude (P=0.001) and knowledge (P=0.001) significantly increased in two groups. The mean score of knowledge after training was significantly higher by 11.6 units in the intervention group than in the control group ($F_{(1, 51)}=13.77$, 95% CI; 5.3%, 17.9%, P=0.001). The effect size was 0.213. The mean attitude score in the intervention group was significantly higher than in the control group by 7.1 units ($F_{(1, 51)}=20.45$, 95% CI; 3.9%, 10.2%, P=0.001) after training. The effect size was 0.286.

Conclusion: One-day workshop training can improve the knowledge and attitude of nursing students regarding children's privacy protection. It is recommended that nursing professors use workshop training to improve students' knowledge and attitudes towards patient privacy.

Keywords:

Patient privacy, Children, Knowledge, Attitude, Nursing students

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Highlights

- Hospitalized children are often at risk of privacy violations.
- Workshop training can help protect the privacy of hospitalized children by improving nursing students' attitudes and knowledge.
- One-day workshop training improved the knowledge and attitude of Iranian nursing students regarding children's privacy protection.

Plain Language Summary

The need to protect patient privacy is one of the basic rights of patients. Children's privacy is often overlooked in hospitals. In this study, we evaluated the effect of workshop training about children's privacy on 54 Iranian nursing students' knowledge and attitudes. We put them in two groups of control and intervention. The control group received routine training at the university, while the intervention group received one-day workshop training. The results showed, after training, their attitude and knowledge scores significantly increased in the two groups, but were higher in the intervention group. Therefore, workshop training can improve the knowledge and attitude of nursing students regarding children's privacy protection.

Introduction

Patient privacy includes protecting and ensuring the confidentiality of personal information. It is a multidimensional concept with physical, social, psychological, and informational aspects, which is especially important in health services [1, 2]. This concept is now one of the principles of medical ethics and one of the patients' rights [3]. One of the five principles of the Iranian patient's rights charter is also the privacy of patients [4]. The protection of patient privacy is a fundamental value rooted in the tradition and history of the nursing profession [3]. Patient privacy includes different aspects of physical (proper covering, preventing unnecessary exposure of the patient, and observing ethical considerations in clinical and physical examinations) [5, 6], informational (confidentiality of the patient's personal information) [6, 7], and social (controlling and maintaining the confidentiality of the environment around the patient, social interactions, and social contacts) [5, 6].

A child's need for privacy is related to developing a sense of independence. Children's knowledge of privacy and the need to control their private space increases as they become older and cognitively developed [1, 8]. Children are both mentally and physically vulnerable and may not be able to express their feelings. It is challenging to provide privacy for child patients during visits and treatment procedures, especially in rooms with multiple patients, which is an important concern. In a

study by Boztepe et al., the lack of privacy was reported as one of the worst experiences of children in the hospital [9].

One of the barriers to protecting the privacy of hospitalized children is the lack of education about patient privacy and insufficient knowledge of patients' or children's rights [1]. It is necessary to have the knowledge and proper attitudes towards protecting the privacy of patients [10]. During internships, nursing students should know the different physical and mental needs of patients, including the need to respect their privacy [11]. In this regard, educational methods can have a significant impact [2]. Nursing students directly deal with patient privacy during clinical practice, collect patient information, and often share the information with other students [12], which leads to the violation of patient privacy. The need for practical methods for education, such as workshop training [2], to teach the importance of patient privacy is becoming more evident [13]. These methods can provide a solution to the current patient privacy education gap, instilling in students the necessary skills and attitudes to protect patient privacy [10, 14]. Workshop training is an opportunity to practically learn and communicate with classmates and teachers. It provides a way to create an educational experience through interactions and discussions with others [15] and to have effective communication and performance [16]. Nursing students' low knowledge of ethical codes and patients' rights and insufficient or lack of training are among the factors that affect their performance in

clinical environments [17]. This study aimed to determine the impact of workshop training on the knowledge and attitude of children's privacy protection in nursing students from Rasht, north of Iran.

Materials and Methods

This is a quasi-experimental study that was conducted on 54 nursing students in the 7th and 8th semesters at the School of Nursing and Midwifery, [Guilan University of Medical Sciences](#), Rasht, Iran during September-October 2023. According to a previous study [18] and using G*Power software, the number of required samples was calculated as 56 (28 per group), considering a test power of 0.95, an effect size of 0.50, and a significance level of 0.05, and 20% sample dropout. The inclusion criteria were the study in the fourth year for earning a bachelor's degree in nursing, and willingness to participate in the study. The students who did not participate in the intervention or did not complete the questionnaire were excluded. Sampling was done by a census method. Then, the participants were randomly divided into equal groups (1:1) of intervention and control.

The data collection tools were a sociodemographic form (surveying age, sex, semester, marital status, and history of participation in the patient privacy workshop), a researcher-made patient privacy knowledge scale, and a researcher-made patient privacy attitude scale. The patient privacy knowledge scale had 28 items and four dimensions of informational (9 items), physical (8 items), psychosocial (8 items), and spiritual/religious (3 items), answered by yes (1 point), No (0 points), or no idea (0 points). The total score ranges 0-28. The patient privacy attitude scale had 30 items rated on a 5-point Likert scale from 0 (completely disagree) to 4 (completely agree). The total score ranges was 0-120. Higher scores in knowledge and attitude scales indicate a higher knowledge and a more positive attitude towards children's privacy, respectively. The content validity of the knowledge and attitude scales was determined based on the opinions of 14 nursing professors, and by calculating the content validity index (CVI) and content validity ratio (CVR) based on the Lawshe table [19]. In the knowledge scale, the CVR value was 0.87 for the informational dimension, 0.94 for the physical dimension, 0.98 for the psychosocial dimension, and 0.94 for the spiritual/religious dimension. For the overall knowledge scale, the CVR value was 0.94, which is more than the minimum acceptable value, the CVI value was above 0.98, and the Cronbach's α coefficient was 0.84. In the attitude scale, the CVR value for all items was also more than the minimum significant value based on the Lawshe table (CVR=0.98); the CVI was 0.94, and the Cronbach's α coefficient was 0.87.

To avoid the possibility of contact between the two intervention and control groups during the study, the control group entered the study first. They received routine training at the university. In the intervention group, there was a workshop on children's privacy protection. The content of the workshop training included information related to the definition of privacy, the importance and necessity of protecting privacy in pediatric units, patient rights, the benefits of respecting privacy, the consequences of not respecting privacy in treating children, and the ways of protecting children's privacy in pediatric units (Table 1). The workshop was held in two groups of 14 for one day in two sessions at the School of Nursing and Midwifery. The prepared content was presented to the students, and the recommendations and feedback for the next actions and plans were collected. At the end, the students' questions were answered. The provided content was prepared based on library studies, and based on the opinions of experts in the field of patient rights. Of 57 volunteered students, 56 met the inclusion criteria and entered the study. Two students from the control group did not complete the questionnaires. Therefore, the final analysis was done on 54 students. Figure 1 shows the flowchart of sampling and allocation processes.

Descriptive statistics were used to describe the data. Shapiro-Wilks test was used to check the normality of data distribution; Levene's test was used to check the homogeneity of the variances; and Pearson's correlation test was used to test the collinearity assumption between the scores before and after the intervention. The assumption of homogeneity of regression coefficients was also tested. The mean knowledge and attitude scores were compared between the two groups using analysis of covariance (ANCOVA). In addition, the partial eta squared effect size (η^2) was reported for the ANCOVA. The η^2 values of 0.01-0.06, 0.06-0.14, and <0.14 indicate small, medium, and large effect sizes, respectively [18]. The data was analyzed in SPSS software, version 16 and the significance level was set at 0.05.

Results

The mean age of the students was 22.62 ± 1.53 years in the control group and 22.96 ± 1.57 years in the intervention group. As can be seen in Table 2, the majority of students were female (55.6%); 53.6% in the intervention group and 57.7% in the control group. The majority of them were unmarried (98.1%); 57.1% in the intervention group and 50% in the control group. Moreover, 53.7% were studying in the 7th semester. The grade point average (GPA) of the students was 17.13 ± 0.78 in overall,

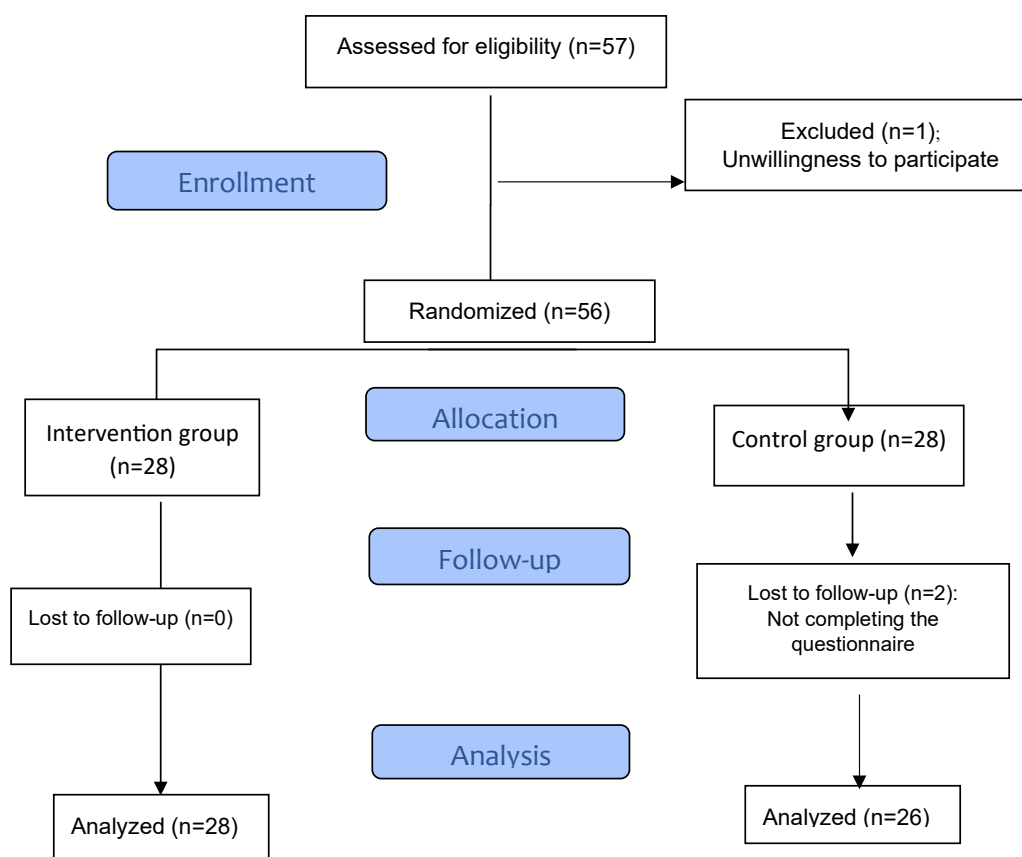


Figure 1. CONSORT flowchart of the enrollment and allocation processes

17.27±0.72 in the control group, and 17.01±0.82 in the intervention group. Most of the students in the intervention (96.4%) and control (100%) groups had no history of participating in the privacy protection workshop.

The assumption of the homogeneity of variances between the two groups was confirmed for the knowledge variable ($P=0.313$), but this assumption was not established for the attitude variable ($P=0.004$). Pearson's

correlation test results for the collinearity assumption showed a moderately significant positive correlation between the pre-test and post-test scores of knowledge ($r=0.414$, $P=0.002$) and a strong significant positive correlation between the pre-test and post-test scores of attitude ($r=0.589$, $P=0.001$). In other words, the assumption of linearity between the Pre-test and Post-test scores was maintained for both knowledge and attitude variables. To check the assumption of homogeneity of

Table 1. The content of one-day workshop training on children's privacy protection

Content
Definition of privacy
Aspects of privacy in hospitalized children: Informational, physical, psychosocial, spiritual/religious
Importance and necessity of respecting privacy in pediatric units
Patient's rights
Benefits of protecting and the complications of not protecting children's privacy
How to protect children's privacy in pediatric units
Privacy of hospitalized children during common treatment procedures such as physical examination, catheterization, etc.

Table 2. Sociodemographic characteristics of nursing students in two study groups

Variables		Mean±SD/No. (%)		
		Total (n=56)	Control (n=26)	Intervention(n=28)
Age (y)		22.80±1.55	22.62±1.53	22.96±1.57
Gender	Male	24 (44.4)	11(42.3)	13(46.4)
	Female	30(55.6)	15(57.7)	15(53.6)
Marital status	Single	53(98.1)	26(100)	27(96.4)
	Married	1(1.9)	0(0)	1(3.6)
Semester	7	29(53.7)	13(50)	16(57.1)
	8	25(46.3)	13(50)	12(42.9)
GPA		17.13±0.78	17.27±0.72	17.01±0.82
History of participation in privacy protection workshop	Yes	1(1.9)	0(0)	1(3.6)
	No	53(98.1)	27(100)	27(96.4)

GPA: Grade point average; SD: Standard deviation

regression coefficients, the significance of the interaction between the independent variable (group) and covariates (pre-test scores) was tested. The interaction effect for knowledge ($P=0.076$) and attitude ($P=0.667$) was not significant. Therefore, the assumption of homogeneity of the regression coefficients was confirmed, and we can thus perform ANCOVA for the variables of knowledge and attitude.

The mean knowledge score in the intervention group was significantly higher than in the control group by 11.6 units ($F_{(1, 51)}=13.77$, 95% CI; 5.3%, 17.9%, $P=0.001$) after the intervention. The partial eta squared effect size was 0.213 (Table 3). The mean attitude score in the intervention group was significantly higher than in the control group by 7.1 units ($F_{(1, 51)}=20.45$, 95% CI; 3.9%, 10.2%, $P=0.001$) after the intervention. The effect size

was 0.286 (Table 3). After controlling the effects of Pre-test scores, the knowledge and attitude of nursing students in the intervention group were significantly higher than in the control group after the intervention (Figures 2 and 3).

Discussion

This study was conducted to investigate the effect of one-day workshop training on the knowledge and attitude of Iranian nursing students regarding children's privacy protection. The results showed that the knowledge of nursing students regarding confidentiality was at a moderate level. Kucukkelepce et al. also reported that Turkish nursing students' knowledge of patient privacy was at a moderate level [20]. In the study by Beyg et al., the patient privacy protection score of nurses was also

Table 3. Comparison of knowledge and attitude before and after the intervention

Variables	Time	Mean±SD		95% CI ^a		ANCOVA		
		Control (n=26)	Intervention (n=28)	Lower Bound	Upper Bound	$F_{(1, 51)}$	P	η^2
Knowledge	Pre-test	71.6±13.8	63.6±20.8	5.3	17.9	13.77	0.001	0.213
	Post-test	74.7±14.4	83.3±11.5					
Attitude	Pre-test	76.3±7.7	74.9±8.5	3.9	10.2	20.45	0.001	0.286
	Post-test	76.9±6.6	83.1±8.6					

^aAdjusted for pre-test scores.

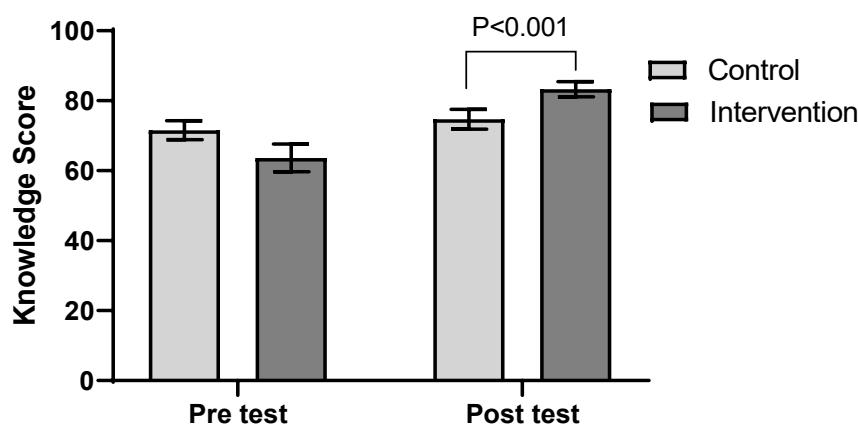


Figure 2. Comparison of pre-test and post-test knowledge scores in nursing students

Notes: Values are shown as mean with 95% confidence interval. P is based on ANCOVA.

a moderate level [21]. The relatively favorable knowledge of children's privacy protection in nursing students before intervention in our study may be because the nursing students have lower responsibility for patient treatment and thus have enough time to respect the patients' rights. On the other hand, nursing students during their internship have more access to educational resources and information in various fields. Although the knowledge score of nursing students was above average, it is still not desirable, and they need more training and education. The results of the present study showed the significant effect of one-day workshop training on the knowledge of nursing students, which is consistent with the results of Beyg et al. who reported that in-person ethics training significantly affected the respect for patient privacy in nurses [21].

Our results indicated the nursing students' positive attitude towards respecting the privacy of children in pediatric units. Kuchukkalpche et al. also reported nurses' positive attitudes toward patient privacy [20]. In Ceylan et al.'s study, nurses' attitudes towards respecting patient privacy were favorable [1]. However, in the study by Adib-Hajbagheri et al., the attitude of nursing students was not substantial [2]. Our results showed that one-day workshop training improved the attitude of nursing students, which is consistent with the results of Adib-Hajbagheri et al. and Abedian et al. [2, 22]. Adib-Hajbagheri et al. reported that an educational program based on group discussion had a positive effect on improving the attitude of nursing students towards respecting privacy [2]. Group discussion training is similar to workshop training [23]. Pakdaman et al. and Mohammadi et al. also found that the workshop training improved the attitudes of students in other fields of study [23, 24].

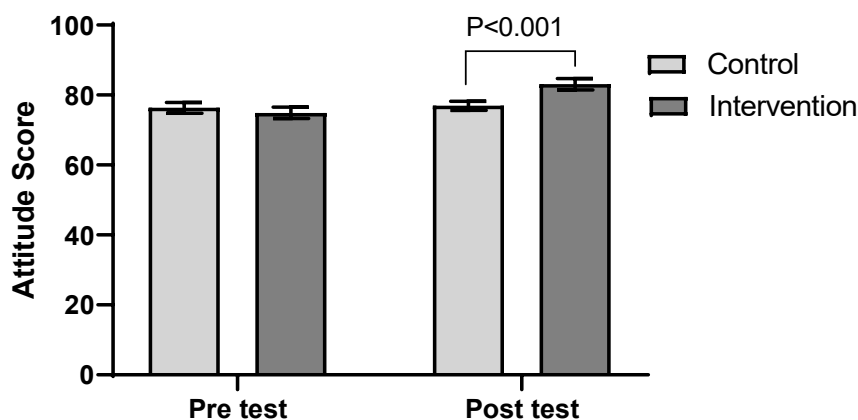


Figure 3. Comparison of Pre-test and Post-test attitude scores in nursing students

Notes: Values are shown as mean with 95% confidence interval. P is based on ANCOVA.

Overall, it can be concluded that, by using practical teaching methods such as workshop training, the knowledge and attitude of nursing students regarding children's privacy in pediatric units can be improved. It is recommended that nursing professors use workshop training to improve students' attitudes and knowledge towards children's privacy protection. The findings of this research can help medical university managers and hospital managers to monitor children's privacy protection in nursing students and nurses more carefully. One of the limitations of this study was the small sample size which was due to non-cooperation of some students because of not having enough time. Since this research was conducted in only one faculty and university, it may not be possible to generalize the findings to other faculties and universities in Iran.

Ethical Considerations

Compliance with ethical guidelines

This study was approved by the Ethics Committee of [Guilan University of Medical Sciences](#) (Code: IR.GUMS.REC.1402.130). All patients declared their written informed consent.

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Authors' contributions

Study design and writing: Fatemeh Azimi and Fariba Asgari; Data analysis: Saman Maroufizadeh; Data recruitment: Fariba Asgari, Yasaman Yaghobi, and Morteza Rabar Taramsari; Data collection and final approval: All authors.

Conflict of interest

The authors declared no conflict of interest.

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