The effect of combined education on the knowledge and care and supportive performance of parents with children with cleft lip and palate: A clinical trial study

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Abstract

Cleft lip and palate is a major problem that disrupts the child's family life. The present study aimed to investigate the effect of combined education on the knowledge and care and supportive performance of parents with children with cleft lip and palate. This is a clinical trial study was conducted on 40 parents referring to hospitals. The data were collected using the demographic information questionnaire, the questionnaire of parental knowledge and care supportive performance questionnaire and analyzed using descriptive and analytical tests. After education the intervention group, the mean score of parents' care and supportive knowledge significantly increased in the intervention group as compared to the control group. There was also a significant difference in the mean score of parents' care-supportive performance between the two groups (P < 0.001). It is recommended to use the combined education as an effective method to increase knowledge and performance in parents of children with cleft lip and palate.

Keywords

combined education, knowledge, cleft lip/palate, performance

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Introduction

Cleft lip and palate is the most common congenital defect in the jaw and face area which is seen in various forms of cleft palate, lip cleft or accompanying cleft lip and palate. These abnormalities exist in two forms of non-syndromic and syndromic ones 9.1 Cleft palate and lip are associated with many other problems. As if, autologic diseases, speech and lingual problems, dental deformities, facial growth defects and psychosocial problems in children and their families are among these cases.² The reason of these clefts' creation is unknown, but physicians believe that both environment and genetics are effective in creating them. Based on the results of a meta-analysis about cleft lip and palate anomalies prevalence rate in the United States from 2013 to 2015, this number is estimated 1 per thousand live births.³ Numerous epidemiological studies have been done in Iran that any of them has provided a different incidence of these anomalies from 77% to 3.33% of cases per thousand births from different areas of Iran.⁴⁻⁵

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Regardless of aesthetic abnormalities, other possible problems such as: nutritional problems, hearing loss, abnormal speech and dental relate problems will be caused due to the cleft lip and palate and the course of this anomaly can affect the family's psycho-social performance. And generally will impact on the child and family's adaptation power and their quality of life. Therefore, it is necessary to acquire certain skills to solve the child's problems by parents; of course, the collection of these skills arises based on parents', especially the mother's, knowledge and performance improvement.6 The results of studies show that the child's sickness affects the family lifestyle and parents consider themselves responsible for the child's illness and get anxious, scared and feel guilty, which ultimately influences the whole family performance.⁷

Patient and his/her caregivers' training cause an optimal health behavior with 3 major goals of health preservation and promotion and preventing disease, health restoration and helping the person adaptability and compatibility.8 Parents of children with cleft lip and palate anomaly experience high levels of anxiety and fear due to various stressful factors such as acute disease conditions, environment, deficiency of surgical equipment and specific diagnostic and therapeutic measures; so it is necessary to use special educational interventions to improve awareness, reduce various psychological tensions and a better health management. 9 That combined education as a combination of different media is considered an appropriate approach among others to create an optimal educational program for patients' parents. In fact, in this educational method, learners can progress in a selftaught manner and even repeat some of the educational programs again.¹⁰ On the other hand, superior interactions among people, security sense among parents and lower expenses are other benefits of this educational method that led the researcher to select this method to train the parents among educational methods. 11 The use of training methods and its effect on learners is currently done in different ways. Common methods of health education include face-to-face, virtual and combined; the combined education refers to a combination of traditional face-to-face training and training through the use of technology.¹² Bersin defined the combined training as a combination of different technological means of films and electronic booklets besides face-to-face training, activities and a variety of events to create an optimal training program for specific audience. 13 Important subjects in combined learning are the proper combination of educational materials, methods and strategies that have the most impact at the lowest cost.¹²

Since, more than 70% of the persons on the health care team are nurses; on the other hand, they have more

access to the patient and their families; then, the patient training is one of the primary duties of nurses and one of their key roles in providing health services. ¹⁴ For parents with a child with cleft lip and palate, it is necessary for the nurse, in the stage of preparing the child for surgery, to acquaint the parents with some urgent needs after surgery. Encourage parents to be with their child after the operation so that their child feels more comfortable. The nurse should encourage parents to express their feelings and concerns, which is effective in promoting pre-operative emotional attachment.¹⁵ The nurse should provide the mother with the necessary training to care for the child at home before surgery (especially nutrition) and encourage parents to be balanced, not overly supportive or careless. Also encourage the mother to start feeding as soon as possible to help the mother-child emotional bond.16

Considering these matters, one of the most important problems of these patients is associated with postoperative care by parents, such as feeding the child with cleft lip and palate, cares before and after operating the cleft lip and palate, physical and psychological cares for these children in long-term, cares at home, and parents' limiting attitudes and beliefs in the use of medications by the patient. All of these problems lead to more problems for the patient, family, and the community due to lack of sufficient knowledge in this regard. Therefore, considering the importance of combined learning and valuable role of nurses in providing knowledge, this study aimed to conduct this research to improve the parents' caresupportive performance, hoping at reducing part of the problems of these children and their families as well as the community through implementing this education method. This study used the combined education, aiming at determining the effect of combined education on knowledge and care-supportive performance in parents of children with cleft lip and palate in the hospitals.

Materials and Methods

The present study is a clinical trial study (IRCT 20190308042967N1). It was conducted to investigate the effect of combined training on knowledge and care-supportive performance in parents of children with cleft lip and palate. Researcher After receiving the code of ethic and obtaining a written permission from the Vice Chancellor for Research and Technology of Ahvaz Jundishapur University of Medical Sciences and permission from the management of the hospitals affiliated to the mentioned university has started random sampling. The participants in this study were assured of the confidentiality of information and explained about the research goals and importance. The samples were

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selected according to the inclusion criteria and reaching the sample size saturation. Then, they were divided in two groups of intervention (N=20) and control (N=20) groups using randomized replacement blocks at size 4 (using the table of random replacements). Then, both groups completed the pretest questionnaires (demographic information, knowledge and care-supportive performance assessment). Education intervention in forms of (face-to-face and displaying films) was implemented for the intervention group by the research in 4 sessions of 45 minutes. To use the combined education method, the parents were first face-to-face explained about the primary notes and then displayed educational films. The persons in the control group received no education. The issues of these sessions included (explaining about cleft lip and palate, treatment and general care, nursing cares). One month after the intervention, the post test was performed through re-answering the questionnaires by the two groups. At the end of the training session (after posttest), the pamphlet was delivered to both groups. Then, the results were analyzed and compared using descriptive and analytical statistics.

The collecting data tools in this study were demographic questionnaire containing information such as age, child's sex, parents' education, monthly income, family marriage relationship, residence, number of family members, and the history of this disorder among the first and second grade relatives.

The second questionnaire was related to the caresupportive knowledge assessment in parents of children with cleft lip and palate. To compile this questionnaire, 26 items were designed according to the education used in this study and after studying the texts and resources. The items were scored in a 5-option Likert scale, ranging from totally agree (5), agree (4), no idea (3), disagree (2) and totally disagree (1). Higher score indicated more desirable conditions. The total score ranged from 50 to 130 at three levels of poor (0-50), medium (51-80), and good (81-130).

The third questionnaire was related to the care-supportive performance assessment in parents of children with cleft lip and palate. Studying the texts and resources and according to the training used in this study, 11 items were designed, scoring based on a 4-option Likert scale ranging from 3=always, 2=usually, 1=sometimes, 0=never. The total questionnaire was scored from the minimum score, i.e. zero, to the maximum score, i.e. 33, ranging from poor (0-10), medium (11-20), and good (21-33).

In addition, in this study, to analyze the items of demographic information, using descriptive statistics in forms of percentage, mean, and standard deviation, some of the features of the sample size were descriptively presented using tables and charts. Independent t test was used to compare the quantitative variables in the two groups, and chi square test was used to compare the nominal qualitative variable. To compare before and after the intervention, t-output test was used. All the analyses were performed by SPSS₂₂.

Results

40 parents (mother or father) of the children with cleft lip and palate participated in the present study. Their mean and standard deviation age in the intervention group and the control group were 39.15 ± 1.59 and 38.05 ± 2.41 , respectively. In terms of education, the most persons in the intervention group (10 persons (50%)) and the most persons in the control group (11 persons (55%)) had diploma. Regarding the parent's income, 14 persons (70%) in the intervention group and 12 persons (60%) in the control group had an income less than 2 million Tomeans. In the intervention group, 11 persons (55%) and in the control group, 12 persons (60%) were employed. 18 persons (90%) in the intervention group and 17 persons (75%) in the control group had no other child with this disorder. Moreover, 15 persons (75%) in the intervention group and 14 persons (70%) in the control group had a child with cleft lip and palate. To compare the frequency distribution of demographic information between the two groups of intervention and control, chi square statistical test was used and no significant statistical difference could be found between the two groups (P < 0.05) (Table 1). The comparison of mean and standard deviation of the parents' care supportive knowledge in the samples under study before and after the intervention in the intervention and control groups (Table 2). The comparison of means and standard deviations of the parents' care- supportive performance in the samples under study before and after the intervention in the two groups of intervention and control (Table 3).

Discussion

The present study aimed to investigate the effect of combined education on the care-supportive knowledge and performance of parents of children with cleft lip and palate. According to the findings, the combined education led to significant increase in knowledge of the parents in the intervention group, as compared to the control group. In this regard, some studies indicated that educational programs succeeded in improving the samples' knowledge. For example, Ikata et al. reported in their study that a structural training program has caused to mothers' awareness increasing their performance improving

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Table 1. Comparison of homogeneity in the two groups of intervention and control in terms of demographic characteristics.

Group

	Intervention group (percent) frequency	Control group (percent) frequency	<i>P</i> -value
Variable			
Sex			
Male	15 (75%)	14 (70%)	.72
Female	5 (25%)	6 (30%)	
Parent's sex	, ,	, ,	
Female	13 (65%)	15 (75%)	.72
Male	7 (35%)	5 (25%)	
Parent's education			
Below diploma	8 (40%)	5 (25%)	.49
Diploma	10 (50%)	11 (55%)	
Academic degree	2 (10%)	4 (20%)	
Marital status	` ,	, ,	
Married	19 (95%)	18 (90%)	.54
Divorced	l (5%)	2 (10%)	
Income	` '	, ,	
Less than 2 million Tomeans	14 (70%)	12 (60%)	.16
Between 2 and 4 million Tomeans	2 (10%)	4 (20%)	
More than 4 million Tomeans	2 (10%)	4 (20%)	
Employment	` ,	, ,	
Employed	II (55%)	12 (60%)	.74
Housewife	7 (35%)	5 (25%)	
Unemployed	2 (10%)	3 (15%)	
Another child with this disorder	` ,	, ,	
Yes	2 (10%)	3 (15%)	.63
No	18 (90%)	17 (85%)	
Type of cleft lip	, ,	, ,	
Cleft lip	I (5%)	3 (15%)	.55
Cleft palate	4 (20%)	3 (15%)	
Cleft lip and palate	I5 (75%)	14 (70%)	
Parent's age	39.15 ± 1.59	38.05 ± 2.41	.09

Table 2. The comparison of mean and standard deviation of the parents' care supportive knowledge in the studied samples before and after the intervention in the intervention and control groups.

Stage	$\frac{\text{Intervention group}}{\text{Mean} \pm \text{standard deviation}}$	$\frac{\hbox{Control group}}{\hbox{Mean}\pm\hbox{standard deviation}}$	P
After the intervention	102.2 \pm 12.57	77.65 ± 7.37	<.001
P	<.001	.76	

The comparison of the care-supportive knowledge mean of the persons in the two groups using chi square test showed that though there was no significant difference between the two groups before the intervention, there could be found a significant difference between the two groups after the intervention (P < 0.05). Regarding the comparison of the internal care supportive knowledge mean, the results of paired t statistical test indicated a significant statistical difference in the intervention group (P < 0.05) but there was no significant difference in the control group.

about postoperative care in children with cleft lip and palate.¹⁷ In fact, this researcher stated that increasing mothers' awareness has important effects on the control and adaptability of the child's illness and will be

effective in their achievement to better results in the long-term. Moreover, the results of this study indicate that education along with emphasis on nutritional behavior has made some improvement in knowledge and Hakim et al 5

Table 3. Comparison of me	an and standard deviation of the parents	s' care supportive performance in the studied samples
before and after the interver	tion in the intervention and control grou	ıps.

Stage	$\frac{ \text{Intervention group}}{\text{Mean} \pm \text{standard deviation}}$	$\frac{ Control\ group}{Mean\pmstandard\ deviation}$	P
After the intervention	$\textbf{27.40} \pm \textbf{5.86}$	14.15 ± 4.15	<.001
P	<.001	.38	

The comparison of care supportive performance mean between the two groups by using t test indicated that though there was no significant difference between the two groups before the intervention, there could be found a significant statistical difference between the two groups after the intervention (P < 0.05). In contrast, considering the internal care-supportive performance mean, the results of paired t statistical test showed a significant difference in the intervention group (P < 0.05) but there was no significant difference in the control group.

maternal performance regarding nutrition of children with cleft palate. ¹⁶ This researcher declared in justifying his results that combined education, by complementing the strengths and weaknesses of electronic and face-to-face learning, has improved interaction in educational environments, increased flexibility and effectiveness and reduced the distance between learning and practice; which of course, it was a suitable solution to upgrade educational quality. In this study, combined education could support parents in managing their child's illness by providing needed tools and essential support, which is similar to the results of the present study.

Moreover, the findings of Hakim et al study on the effects of family-based empowerment model on the level of knowledge of parents of children with stoma showed that education the parents of children with stoma through family-based empowerment model can increase care and preventive knowledge of complications of children with stoma. It also delayed the onset of complications from stoma, resulted from unprincipled care. 18 The results of a study showed that parents, especially mothers with children who suffered from certain diseases, often do not have any effective and efficient adaptive behaviors compared to the normal situation. Since mothers, as the main caregivers, are the actors to maintain the family peace and cohesion and seem to tolerate the most care pressure; so the necessity of mothers' training and their knowledge and attitudes improvement in adapting mothers to illness and reducing care suffering will be necessary.19

Johansson et al, in a paper titled as "Parents' Experiences on Having a Child with Cleft Lip and Palate", revealed that, the birth of a baby with scarring on face caused first parents' poor performance due to their limited knowledge. The parents did not view their baby as disabled but as a baby with a minor congenital defect. The results of this study can be used in training parents to improve their knowledge and performance.²⁰ The results of these studies about educational program impact are consistent with the results of the present

study. While in the study of Mantis et al., diabetic patients' awareness about medicines didn't have a meaningful difference after receiving reminder messages via mobile phone and contradicts the results of the present study.²¹ It seems that the reason of this discrepancy to be in patients' training method; as well as, in studied samples' demographic and cultural differences.

Delaney et al. research showed that parents were able to increase their awareness and performance in improving their child's physical condition after a combined training course. To explain the result of the present study, it can be said that the intervention group received information about the disorder of cleft lip/palate, the predisposing factors, clinical symptoms, side effects, and treatment methods such as balanced diet and medication using the combined training (playing films and face-to-face training) in 4 sessions of 45 minutes. Therefore, it is not unexpected that the persons in the intervention group showed significant increased knowledge of this disorder at the end of the training course, as compared to the persons in the control group.

Moreover, according to the results, the parents' performance score in the intervention group, as compared to the control group, significantly increased after the intervention and, in other words, the persons included in the intervention group have got a better performance in terms of cleft lip / palate anomaly than the control group. In the present study, the researcher reported that an increase in parental performance and raising their awareness were achieved as a result of performing a combined educational program.

The results found by Ramezani et al showed that training the combined care program affected the mothers' performance in caring for infants with pneumonia, and increased the mothers' performance after the intervention. The researcher suggests that this increase was achieved as a result of follow-up process after implementing the intervention in forms of lecture and playing films to resolve the mothers' performance problems and to remind them of their strengths and

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weaknesses, revealing the effectiveness of the training program. In fact, the continuity of cares and increase in their quality and quantity can be achieved by conducting regular and purposeful, as well as simple, expressive, and feasible training sessions. On the other hand, the results of the study by Tomita et al demonstrated that the mean scores of performance before the intervention and after the intervention showed no significant difference; in fact, the knowledge level of the persons in the intervention group significantly increased after the intervention but there was no difference in the scores of performance (24), which may be due to individual, family, social, cultural, and economic differences of the samples under study, affecting the way of self-care and behavior change.

According to the results of the present study, training is effective and regular when the combined training (playing films and clips) is used along with face-to-face learning method. This matter has been proved that the impact a film has on mind is deeper and more accurate than the impact made by a text, words, or speech. Using different training methods including playing films can have positive effects on parents' performance and ultimate improvement of the physical condition of children with cleft lip and palate.

Reyhani et al reported, in a study titled as "The Effect of Training Program on Mothers' Knowledge and Performance on Child Care Management in Epileptic Children" that the performance of the intervention group after the intervention was significantly higher than the control group (25). According to results obtained by the researcher, it seems that the important goal of training is creating right and lasting health behaviors that are valuable to the mother and the child. If the activities related to care management are implemented with active training methods and by recognizing knowledge and performance, as well as providing a desirable environment for creating trust, confidence and convenience for the patient, it can play more effective role in promoting desirable health behaviors. On the other hand, the provision of comprehensible materials based on the patients' needs and using appropriate training along with questions and answers in a few sessions can be useful in achieving better results and most importantly be effective in maintaining health behaviors.24

It should be noted that in the process of the present study, no specific restrictions were identified that affect the quality of research. By confirming the beneficial effects of using combination education in educating patients, this Educational method can be used by nurses to improve the level of knowledge and performance of parents of children with cleft lip and palate, because nurses have high knowledge and skills in transmitting information. Through education, parents are able to continue their learning process, which will improve their health and improve the quality of life for them and their children.

Conclusions

According to the findings, combined education program can improve knowledge and performance in parents of children with cleft lip and palate. Therefore, it can be concluded that providing care and health education programs on cleft lip and palate disorder and the effects of nutritional supportive care in form of combined training (lecture and playing films) can improve knowledge and performance in parents of children with cleft lip and palate. Thus, it is recommended to use the combined training as an effective method in training parents and their sick children to improve their knowledge and performance.

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Author Contributions

AH: contributed to conception, contributed to writing – original draft, contributed to data analysis, Reviewing the final edition.

ZZ: contributed to conception, data collection.

NS: contributed to conception, contributed to writing – original draft, contributed to data analysis.

MS: contributed to conception, contributed to writing – original draft.

HH: contributed to conception, contributed to writing – original draft, contributed to data analysis.

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