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Type of article: Research article

Abstract

Background: Family-centered care (FCC) involves holistic care and requires cooperation with the family in planning, intervention, and the evolution of the care that is being provided. Many previous studies have provided results that indicate the importance of the family's involvement in pediatric care, but there is still resistance in doing so within the organizational culture of the hospitals in Iran. The aim of this study was to determine the effects of FCC on the satisfaction of parents of children hospitalized in 2012 in the pediatric ward at Razi Hospital in Chaloos, Iran.

Methods: This Quasi-experimental study was conducted in 2012 in the pediatric ward at Razi Hospital in Chaloos, Iran. Seventy hospitalized children between the ages of 1 and 3 who suffered from diarrhea, vomiting, or pneumonia were selected through convenience sampling. They were divided randomly into two equal groups, a control group (routine care) and an experimental group (family-centered care). SPSS Statistics 14 software was used to analyze the data, and $p < 0.05$ was considered to be significant.

Results: In the FCC group, the mean score of satisfaction among the parents of the children was 20 out of 90 before the intervention, but, after the FCC method was used, it increased to 83.2 out of 90. In addition, a significant difference was found between the scores of satisfaction for the control and experimental groups ($p < 0.001$), and all parents of children in the experimental group expressed high satisfaction.

Conclusion: Our findings showed that the practice of FCC in caring for the sick children can increase the satisfaction of their parents significantly. The role of the family's involvement is critical in every component of the intervention efforts, as shown by the constructs of participatory support, educational support, and psychological support. Thus, a notable implication here is that FCC may lead to increased quality of care and should be included in the educational programs of the nursing staff in pediatric ward

Keywords: Iran, Parents, Family-centered care, Nursing, Pediatric

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Received: April 07, 2015, Accepted: May 18, 2015, Published: June 05, 2015

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1. Introduction

During the past 40 years, improvements have been made in the fields of science and medical technology that have led to advancements in caring for the physical needs of sick children (1). Worldwide, the mortality rate of children has decreased considerably, from 87 to 51 deaths per 1000 live births. Thus, on a global basis, the number of children who die each year has decreased from 12 to 6.9 million (2). In spite of this significant achievement, more than 19,000 children still die every day, and most of these deaths are caused by preventable and treatable infectious diseases and by deficiencies in family-centered practices. In developing countries, approximately 80% of healthcare occurs at home, and the majority of children die at home without being seen by a healthcare worker (3). Iraq has a total population of 30 million, and its infant mortality rate (IMR) is 36 infant deaths per 1,000 live births. Afghanistan has a total population of 31 million, and its IMR is 122 infant deaths per 1000 live births. Saudi Arabia has a population of 25 million, and its IMR is 48 infant deaths per 1,000 live births. Comparatively, Somalia has a population of 94 million, and its IMR is 109 infant deaths per 1,000 live births. Pakistan has a population of 18 million, and its IMR is 70 infant deaths per 1,000 live births (4). It has been hypothesized in a report on equity and access to quality care that as many as 40% of the infants' deaths could be prevented by improving the family and community care through increasing the knowledge, support, and family collaboration (2).

Iran has a population of 74 million, and its infant mortality rate is 41 infant deaths per 1,000 live births. In the Middle East, healthcare seemingly has undergone a major change with an increased stress on family-centered care (FCC), which is defined as healthcare that recognizes the need for a partnership among physicians, patients, and patients' families in a suitable and holistic manner. Central to the FCC approach is the assurance that decisions will be made that respect the wants, needs, and preferences of the patients and their families (3). When a child is admitted to a hospital, the entire family is affected. In providing care, nurses, doctors, and others who provide care for the child must consider the impact of the child's being admitted to the hospital on all of the members of the family. This precept fits well with FCC, which is "a way of caring for children and their families by providing health services that ensure that care is planned around the whole family, not just the child who is ill. In this context, all of the family members are known as care receivers" (5). In the past, the psychological needs of children and their families have been of little concern to the medical community. Thus, therapeutic environments were designed to satisfy only the patient's physical needs, and this approach of providing only technological services may not be very suitable for the health and welfare of the sick children or their families (6). Many studies have focused on the effects on families when severe or chronic sicknesses afflict their children (1, 7, and 8). In recent years, the focus has been shifting slowly to the needs and preferences of families. Previous studies have shown incongruence between the perceived needs of families and the provision of care by healthcare personnel (9). Studies regarding the needs of families with hospitalized children have indicated that family participation, support, and respect in the care programs for children are the priority needs (10). Accordingly, the satisfaction of families' needs requires a cooperative relationship between families and healthcare workers that reflects mutual trust and respect (11). The philosophy of FCC involves holistic care and requires collaboration with members of the family to plan, intervene, and evaluate the healthcare. Consequently, it changes the concept of conducting interventions on the child and family to performing interventions with the family (12). FCC considers each family as a unique unit and focuses on the permanent influence of the family on a child's life. In addition, this approach emphasizes the provision of care that involves healthcare workers, the sick children, and their families (13). Families form the heart or core of holistic care for children. Even though healthcare workers understand the importance of such care, they face multiple problems in planning and incorporating it in their programs (14). This may be due in part to a lack of understanding of the family's needs and to a lack of knowledge regarding various elements of the patient's care. Hence, the aim of FCC is to minimize the signs and symptoms of a disease and to maximize the cognitive, physical, psychological, and social capabilities of families (14). This study was conducted in 2012 to determine the effects of FCC on the satisfaction of parents of children in a pediatric ward at Razi Hospital in Chaloos, Iran.

2. Material and Methods

2.1. Study settings

This semi-experimental study was conducted in 2012 in the pediatric ward at Razi Hospital in Chaloos, Iran.

2.2. Sampling and participant selection

The following formula was used to calculate the sample size that was used in this research (15):

$n = t^2(1-P) / P(1\% \times E\%)$; where: n (sample size)=70, P (patient proportion)=0.40, and E (error of estimate)=30%.

Based on the above formula, 70 children with diarrhea, vomiting or pneumonia who were hospitalized for one to three days were selected using the convenience sampling method. They were divided into two groups, i.e., 35 in the control group that received routine care and 35 in the experimental group that received care based on the principles of FCC. The two groups also consisted of children that were similar with respect to age, condition, and situation. We adhered to the principle of homogeneity (same hospital, same ward, same facilities and situation, and the same pediatrician) in the sampling of variables in order to minimize various biases.

2.3. Measurement tool and data collection

With the permission of the Institute of FCC, we used its family satisfaction questionnaire that contained 47 items that could be answered on a five-point Likert scale, i.e., 0, 1, 2, 3, 4, and 5 (4). The first author of the questionnaire translated it to the Persian language for our use. Subsequently, the questionnaire was sent to an Iranian professional editor and translator who tested and validated the accuracy of the translation. To assess the validity of the content, the questionnaire was sent to a panel of 10 experts consisting of academic members of Shaheed Beheshti, Tarbiat Moddaress, Iran University of Medical Science and Tehran University, and supervisors' training centers in Challous' and Nowshahr's Hospitals. The Chronbach's alpha test was used to determine the reliability of the questionnaire. Principal axis factor analysis with varimax rotation was calculated to assess the underlying structure of the 30 items in the FCC questionnaire. The items were designed to index three constructs, i.e., participatory support, educational support, and psychological support. After varimax rotation, these three factors accounted for 22.1, 16.1, and 12.9% of the variance, respectively. One of each child's parents completed a two-part questionnaire in the presence of a researcher. The first part of the questionnaire solicited socio-demographic information about the child and the parent who completed the questionnaire. The second part consisted of 30 questions regarding the satisfaction of the parent with the care the child received. The scale of items ranged from 1 to 5. Of the 30 questions, eight were related to participatory care, 10 to educational support, and 12 to psychological support. Satisfaction was ranked by four items, i.e., "Not satisfied, Weak, Moderate, and Good" with corresponding scores of Weak (0-29), Moderate (30-59), and Good (60-99). The findings showed the items and factor loadings for the rotated factors, with loadings less than 0.40 omitted to improve clarity. To ensure that the questionnaires were completed accurately, the same researcher obtained the necessary permission from the parents and described the process of the study to them.

2.4. Statistical analysis

After the data were encoded, they were analyzed using SPSS version 14 (SPSS, Inc., Chicago, Illinois, United States of America), and the Wilcoxon signed-rank test and the paired sample t-tests were used for the analysis. All variables prior to analysis were checked for normal distribution. All items were measured on a Likert scale (qualitative, ordinal), and the Wilcoxon test (non-parametric) was used to compare pre-test (before intervention) and post-test (after intervention). The total mean score of items related to the satisfaction of parents can be consider as interval (quantitative) variables, therefore, due to the normal distribution of the total score, the paired sample t-test was used to compare the scores before and after intervention. The extent of the parents' satisfaction concerning the importance of FCC was analyzed using descriptive statistics, means, standard deviations, and frequency tables. The means of the family's satisfaction before and after the intervention were presented in table form. Also, the paired sample t-test was used to compare the means of family satisfaction before and after intervention.

3. Results

Of the subjects, 51.4% were between three months and three years old, 60% were males, 61.4% were the first child, 68.57% had been hospitalized for more than four days, 74.29% had social security insurance, and 67.14% had been hospitalized earlier in the same ward (Table 1). Among the parents, 55.72% were between 20 and 30 years old, 97.4% were housewives, and 39.13% had a secondary education (Table 2). A non-parametric paired sample test (Wilcoxon test) was used to compare each item before and after intervention. The results indicated that the mean scores of all items related to parent satisfaction were increased significantly. The frequency distribution of total satisfaction among parents, before and after intervention, indicated that the level of satisfaction of all parents (100%) was improved to "Good condition," whereas, before the intervention, 85.7% of the parents responded with "Weak," and only 14.3% responded that they had a "Moderate" satisfaction level.

Before the intervention, the levels of satisfaction for participatory, educational, and psychological support were moderate, weak, and weak, respectively. The total score of satisfaction was (20.00±5.536) (Table 3). Conversely, in the intervention group, the satisfaction levels rose by more than a factor of two in every aspect of support (Table 3).

A highly significant difference was found between the scores of satisfaction before and after intervention ($p < 0.001$) (Table 3).

The total score for participatory satisfaction was 8.71 ± 3.824 before intervention, and it increased significantly after intervention to 21.20 ± 1.725 . Before intervention, the mean score of parent's educational satisfaction was 7.46 ± 2.801 , but, after intervention, the mean score increased significantly to 28.06 ± 1.73 . The results of the paired sample t-test also indicated that psychological support increased significantly from 3.83 ± 1.79 before intervention to 33.86 ± 1.216 after intervention. The differences between the mean scores before and after intervention were significant at the 99% confidence level. This means that implementation of the FCC approach increased families' satisfaction and increased the quality of care in the clinical situation in the pediatric wards.

Table 1. Characteristics of Patients (n=70)

Variable		n	%
Gender	Female	28	40.00
	Male	42	60.00
Age (years)	1-2	34	48.57
	2-3	36	51.43
Order of birth	First child	43	61.43
	Second child	21	30.00
	Third child and more	6	8.57
Duration of hospitalization (days)	1-3	22	31.43
	4-6	44	62.86
	7-9	4	5.71
Type of Insurance	Social insurance	52	74.29
	Health care	1	1.43
	Rural insurance	9	12.86
	Armed force	3	4.28
	No insurance	5	7.14
Number of Admissions	1	47	67.14
	2	20	28.57
	3 and more	3	4.29

Table 2. Characteristics of patients' parents

Variable		n	%
Gender	Female (Mother)	70	100
	Male (Father)	0	0
Age (year)	20-30	39	55.72
	30-40	27	38.57
	40-50	4	5.71
Occupation	Housewife	68	97.14
	Employee	2	2.86
Income	$\leq 8,000,000$ I.R. Rials	37	53.62
	$8,000,000 - 10,000,000$ I.R. Rials	32	46.38
	$> 10,000,000$ I.R. Rials	0	0
Education Level	Secondary school	27	39.13
	High school	13	18.84
	Diploma	25	36.23
	Bachelor's degree and above	4	5.80
Number of Children	1	21	30
	2	11	15.71
	3	19	27.14
	4 and more	19	27.14
Number of visits by parents	1-3	66	94.29
	4-6	4	5.71

Table 3. Mean scores of satisfaction of parents in the two groups after the intervention

Scale	Test	Mean	n	SD ^a	SE ^b	t	p value
Participatory Support	Before intervention	8.71	35	3.824	0.646	-16.797	<0.05
	After intervention	21.29	35	1.725	0.292		
Educational Support	Before intervention	7.46	35	2.801	0.473	-37.024	<0.05
	After intervention	28.06	35	1.731	0.293		
Psychological Support	Before intervention	3.83	35	1.79	0.303	-87.245	<0.05
	After intervention	33.86	35	1.216	0.206		
Total Support	Before intervention	20.00	35	5.536	0.936	-60.9	< 0.05
	After intervention	83.2	35	2.553	0.432		

^a Standard deviation, ^b Standard error

4. Discussion

With respect to the results and the importance of FCC from the parents' perspective, it seems that this type of care has increased interactions between the healthcare team and parents that increased the parents' satisfaction with the healthcare organization and with the care of their children. Each family is unique in terms of its structure, cultural contexts, aims, policies, and its informational, supportive, and service needs (16), and FCC recognizes and appreciates this uniqueness. Healthcare institutions can be directed and guided into the utilization of the elements of FCC, which include mutual respect, support, and participation (18). The results of previous study revealed that participatory care, educational support, and psychological support were considered to be important factors by 75, 77, and 83% of the parents, respectively (18). In this study, the satisfaction score reached 90% after FCC was implemented. In fact, 90% of parents expressed their satisfaction with the care provided. Such a high level of satisfaction was similar to the findings of a previous investigation, which reported 99.8% satisfaction (18). Our results also were consistent with those of previous research in which more than 71% of 20 responders believed that the implementation of FCC had increased patients' and their families' satisfaction and had improved the families' relationships with other members of the healthcare team (19).

When the patient's family members collaborated to provide essential care for the children, satisfaction with FCC improved considerably. The results of a previous study highlighted that 174 family members of patients had participated (75 in the control group and 99 in the experimental group), and the average scores were 3.2 (control group) and 3.5 (experimental group) at follow-up after FCC intervention (20). These results predicted positive interactions between family members and nurses. Such healthcare, collaboration, and support would have been impossible without the establishment of good relationships between the healthcare providers and the patients' families. Application of this approach is necessary to prevent complications during hospitalization. In addition, it can lead to the provision of more holistic care, increased satisfaction of families of hospitalized children, and higher quality care. A survey conducted in Children's Hospital at the University of Virginia (in the U.S.) indicated that sharing information and involving the family in a patient's care had the following effects: 1) A significant increase in the patient's and the family's satisfaction, 2) a decrease in the clinical workload, and 3) an increase in the staff's satisfaction. The results of this research underscored the significance of using components of FCC and encouraging parents' participation in the care of their children (21). The family's satisfaction with care increases significantly when parents are involved actively in the medical care rounds and decision-making (22).

5. Conclusions

Overall, the outcomes of this study indicated that the collaboration that resulted from the implementation of FCC had very favorable effects. This resulted from parents being allowed to participate in making decisions about the healthcare of their children, which resulted in the development of good relationships between the parents and the healthcare providers. Therefore, essential changes should be made in the organizational culture of healthcare settings to incorporate the principles of FCC in their decision-making activities in education and the delivery of service.

With regard to increasing inclination for extensive utilization of FCC in healthcare organizations, more emphasis on its principles, with purposeful operations, can be expected in the coming years. Furthermore, incorporating an FCC syllabus in the nursing curriculum is recommended because of its beneficial impacts on clinical practice.

Acknowledgement

This project was sponsored by the Faculty of Nursing and Midwifery, Islamic Azad University, Chaloos Branch. We express our gratitude to the Deputy Dean of Research at Islamic Azad University, Chaloos Branch, and to all personnel of the pediatric ward at Razi Hospital in Chaloos, Iran. Universiti Putra Malaysia is gratefully acknowledged for providing infrastructural facilities, especially during the data analysis and write-up processes.

Conflict of Interest:

There is no conflict of interest to be declared.

Authors' contributions:

All authors contributed to this project and article equally. All authors read and approved the final manuscript.

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