

# Effect of Self-Care Model Intervention on Quality of Life of Children Undergoing Hemodialysis

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## Abstract

Children undergoing hemodialysis have poor quality of life. The purpose of this study was to evaluate the effect of self-care model intervention on quality of life of children undergoing hemodialysis. A quasi experimental design was used. The study was conducted in the Pediatric Hemodialysis Unit at Menoufia University Hospital, Shebin-Elkom city. A purposive sample of 30 children was selected to carry out this study. Three instruments were used in this study. They were a structured interviewing questionnaire, Standardized Quality Of Life (QOL) checklist and Orem's self-care guidelines checklist. The results of this study showed significant improvement in children's quality of life after implementation of self-care model. The total mean scores of children's quality of life were  $61.16 \pm 5.6634$  on pretest compared to  $34.33 \pm 2.88$  and  $33.66 \pm 2.32$  on post and follow-up tests respectively. It was concluded that implementation of the self-care model improved quality of life of children undergoing hemodialysis on posttest than pretest. So, it was recommended that self-care model intervention should be implemented at all pediatric hemodialysis units to help children adapt and cope better with their disease limitations.

**Keywords:** Self-care model Intervention; Quality of life; Children undergoing Hemodialysis

## Introduction

Children with chronic renal disease commonly have an incurable condition. They face a lot of problems during medical treatment which needs renal dialysis or kidney transplantation. The mortality rate for children with kidney disease remains 30 times higher than children without kidney disease [1]. Frequent hospitalization, infection, delayed growth and development, short stature, and bone disease are frequent complications (Nesic, 2014). Kidney disease is the nine leading cause of death in the world. The incidence among pediatric children on hemodialysis is around 15 million a year [2]. In general population more than 30 children in every 100,000 develop kidney failure each year and the rate increase with age from 4 to 6 years. Renal failure can happen rapidly over days, weeks or months or slowly over a period of years [3]. Acute renal failure may occur due to severe infection, sudden blockage to the drainage of the kidney, kidney stone, hemolytic uremic syndrome or nephrotic syndrome. It may occur as side effect of some medications and

other rare conditions [2]. Acute kidney failure is manifested by drop in blood pressure, vomiting, diarrhea, dehydration and anuria [4]. Children undergoing hemodialysis experience many problems including sleep disorders, peripheral neuropathy, infection, psychological stress, anxiety and depression, cognitive changes, reduction of viscosity and so on [5]. Hemodialysis affects children's quality of life and it can disrupt the amount of physical and social activity as well as life satisfaction (Coelho, 2014). Quality of life is a state of complete physical, mental and social well-being felt by an individual. It refers to children's ability to enjoy normal life activities. It consists of physical, psychological and social aspects (Damiano, 2012). Having a model of nursing care in hemodialysis unit is completely essential to support children's needs, ensure standard nursing care and maintain quality of care (Dobson, 2010). According to Orem's self-care theory, Orem emphasized the role of the children to care for them. Self-care program is expected to

be important in helping these children to maintain and gain their independence in performing their basic activities of daily living which in turn improve their quality of life (Masoodi, 2016).

- i. **Purpose:** The purpose of this study is to evaluate the effect of self-care model intervention on quality of life of children undergoing hemodialysis
- ii. **Research Hypothesis:** Children who received the self-care model intervention had better quality of life on posttest than on pretest.

## Methods

- a. **Research Design:** A quasi-experimental design was utilized for this study (pre, post and follow up tests).
- b. **Research Setting:** This study was conducted in the Pediatric Hemodialysis Unit at Menoufia University Hospital, Shebin El-kom city.
- c. **Sampling:** A purposive sample of 30 children received hemodialysis through arteriovenous fistula was obtained from the previously mentioned settings.
- d. **Inclusion Criteria:**
  - i. Children undergoing hemodialysis 2-3 times/week using arteriovenous fistula.
  - ii. Children aged from 4 to 18 years old who were undergoing hemodialysis for 3 months ago.
- e. **Exclusion criteria:** Children who had other chronic physical illness such as diabetes mellitus, history of any psychiatric illness or neurological problems as head trauma.

**Instruments:** Three instruments were used for data collection.

### Instrument One: A Structured Interview Questionnaire

It was designed by the investigator after reviewing related literature. It was divided into two parts:

#### a. Part One: Characteristics of Studied Children

It included questions about name, age, gender, residence, level of education and duration of hemodialysis.

#### b. Part two: Medical History of Studied Children

It included questions about history of renal failure (onset, causes, history of other family member affection, medication taking and their adverse effect) ( $\alpha=0.97$ ) ( $r=0.87$ ).

### Instrument two: Standardized Quality of Life (QOL) Questionnaire

It was adopted from Ware and Sherburne, (1992) and modified by the researcher to assess children's quality of life. It was a structured interviewing questionnaire (short form-36). It consisted of six dimensions such as general health (3 items), Limitation of

activities (10 items), physical health problems (4 items), emotional health problems (3 items) pain perception (2 items), energy and emotions (7 items). Each item is rated on a 3-point Likert scale and scored as follow ( $\alpha=0.97$ ) ( $r=0.96$ ).

- a. Scoring System for Each Domain: (Table 1)

**Table 1.**

Scoring items	Score
Usually	3
Sometimes	2
Rarely	1

### Instrument three: Orem's Self-Care Guidelines Checklist

It was adopted from Orem, (1991) and modified by the researcher to assess basic self-care needs of the studied sample. It was contained questions about children's diet, fluids intake, elimination habits, hygienic care, activity and exercise, rest and sleep time, exposure to health hazards, and social interaction with others during social groups. Each item is rated on a 3-point Likert scale as follow ( $\alpha=0.97$ ) ( $r=0.98$ ).

- a. Scoring System for Each Domain: (Table 2)

**Table 2.**

Scoring items	Score
Supportive-educative	3
Partial compensatory	2
Wholly compensatory	1

## Validity

For validity assurance purposes, three instruments were submitted to a jury of three experts in the pediatrics field (two professors in pediatric Nursing, and one professor in pediatric Medicine). The modifications were done to ascertain their relevance and completeness.

## Ethical Consideration

- a. A verbal consent was obtained from the parents of children undergoing hemodialysis to allow their children share in the study.
- b. An initial interview was done to inform children and their parents about the purpose, benefits of the study and explain that their children participation was voluntary and they had the right to participate or withdraw at any time.

## Pilot Study

It was carried out on 3 children (10% of the sample) after developing the instruments and before starting the data collection to test the practicability, applicability and to estimate the needed time to fill the instruments. No necessary modifications were done. Therefore, the pilot study was included in the total sample.

## Procedure

### Written Permission

Prior to data collection, a written permission to carry out the study was obtained from the director of setting after submitting an official letter from the Dean of the Faculty of Nursing at Menoufia University explaining the purpose of the study and methods of data collection. Meetings were conducted first with the director of the setting to obtain permission for conducting the research explaining the aims and expected outcomes.

### Data Collection (Assessment Phase)

- a. Data was collected over a period of 6 months extending from the first of March to the first of September 2017. The data were collected according to the time table of cases attendance.
- b. The researcher introduced herself to children and their parents before starting Self-care intervention.
- c. Each child and their mother were interviewed before starting hemodialysis session.
- d. Medical history for each child was collected before starting the intervention using instrument 1 (pretest).
- e. Assessment of quality of life and self-care needs were done by the researcher using instruments 2&3 (pretest).
- f. Children needs and areas of self-care deficits were determined.

### Conducting Self-Care Model Intervention

- a. Individualized intervention based on Orem's Self-Care model was applied to each child with face to face approach according to their developmental needs and deficit (self-care deficits).
- b. Each child received 8 sessions (2session/week) over a period of one month.
- c. **Session 1:** Each child received brief explanation about anatomy and functions of the kidneys, definition, causes and types of renal failure according to their developmental stage. This session lasted for 30 minutes. Oral presentation, discussion and booklet were used.
- d. **Session 2:** Each child received brief explanation about causes, signs and symptoms of chronic renal failure, definition and advantages of hemodialysis according to their developmental stage. This session lasted for 30 minutes. Oral presentation, discussion and booklet were used.
- e. **Session 3:** Each child received information about the steps that should be followed before starting hemodialysis session. This lasted for 20 minutes. Oral presentation and colorful booklet were used.

f. **Session4:** Demonstration about proper hand washing technique, face care, oral hygiene, hair, nail and foot care were provided to each child. The model and colorful booklet ere used. This lasted for 30 minutes.

g. **Session 5:** Each child received information about fistula and its danger signs of malfunction through oral presentation and colorful pictures. Demonstration about fistula care was provided by the researcher using doll simulation and each child given a chance to re demonstration the skill on the prepared model. This session lasted for 40 minutes.

h. **Session 6:** Each child received information about importance of sleep and rest as well as exercise through using oral presentation. Range of motion exercise, deep breathing and coughing exercise were demonstrated by the researcher. Each child asked to re demonstrate the exercise to ensure child's competence. This session lasted for 40 minutes.

i. **Session 7:** Demonstration about bladder training exercise was provided by the researcher and each child asked to hold the urine for at least 5 minutes before starting urination in order to strength his/her muscles and keep on training for several time a day(redemonstration). This lasted for 30minutes.

j. **Session 8:** Each child received information about diet regimen and signs of edema. Oral presentation and colorful pictures were used. Demonstration about wound care was provided through using doll simulation and each child get a chance to redemonstrate the procedure on the prepared model. This lasted for 40 minutes

### Reassessment Phase

Reassessment for quality of life and self-care were done immediately for each child post intervention using the same instruments (posttest).

### Follow Up Phase

Follow- up was done after 3 months (follow up test).

### Data Analysis

Data was coded and transformed into specially designed form to be suitable for computer entry process. Data was entered and analyzed by using SPSS (Statistical Package for Social Science) statistical package version 21. Graphics were done using Excel program. Quantitative data was expressed as mean & standard deviation ( $X \pm SD$ ) and analyzed by using ttest for comparison between means. Qualitative data was expressed in the form of number and percentage (No & %). It was analyzed by using chi-square test ( $X^2$ ). Pearson correlation was used for explaining relationship between normally distributed quantitative variable. A statistical significant difference was considered if  $P < 0.05$ . A highly statistical significant difference was considered if  $P < 0.001$ .

### Results

a. Table 3 Showed distribution of studied children according to their socio-demographic characteristics. As indicated in the table the highest percentage of the studied children was in age group from 8to18 years old and more than half of them were boys (56.7%). Also, 60% of studied children had preparatory education and live in village. Regarding the onset of hemodialysis, it was found that the majority started dialysis at age 1 and less than 4 years old (80%).

**Table 3:** Distribution of studied children according to their Socio-demographic Characteristics.

Characteristics		No = 30	%
Age	4< 8years	4	13.3
	8< 12year	13	43.3
	12-18years	13	43.3
Gender	Boy	17	56.7
	Girl	13	43.3
Residence	Village	18	60.0
	Town	12	40.0
Level of education	Secondary	2	6.7
	Preparatory	18	60.0
	Primary	10	33.3
Onset of hemodialysis	1< 4years	24	80.0
	4-7years	6	20.0

b. Table 4 Clarified distribution of studied children according to their medical history. As indicated in the table 76.7% of

the family members were not affected with kidney problems while more than half of studied children had unilateral kidney affection. Also, it was found that the majority of children get regular medication and had no adverse effect (86.7% & 66.7%) respectively.

**Table 4:** Distribution of studied children according to their medical history.

Medical history		No=30	%
Affected family members	Not affected	23	76.7
	Affected	7	23.3
Kidney Affection	Unilateral	16	53.3
	Bilateral	14	46.7
Getting regular medication	Yes	26	86.7
	No	4	13.3
Adverseeffect of medication	Yes	20	33.3
	No	10	66.7

c. Table 5 Showed distribution of children’s according to their ability to meet therapeutic demands based on their universal self-care requisites on pre, post and follow up test. The table revealed that majority of children was wholly compensatory on pre intervention. Then they becameable to do self-care through supportive educative on post and follow up test in relation to their breathing pattern, fluids intake and output problems, hazards exposure and their social problems. So, there was a highly statistical significant difference at 0.001 level of statistical significance.

**Table 5:** Children’s ability to meet their therapeutic demands based on their universal self-care requisites on pre, post and follow up test.

Children’s ability to meet their Universal self-care requisites	Pre-intervention		Post- intervention		Follow up		Chi square X	p-value
	No	%	No	%	No	%		
	30	100	30	100	30	100		
<b>Breathing pattern problems</b>								
· Wholly compensatory	26	86.7	0	0	0	0	50.042	<0.001
· Partial	4	13.3	4	13.3	4	13.3		
· Supportive educative	0	0	26	86.7	26	86.7		
<b>Fluids intake and output problems</b>								
· Wholly compensatory	26	86.7	0	0	0	0	50.042	<0.001
· Partial	4	13.3	4	13.3	4	13.3		
· Supportive educative	0	0	26	86.7	26	86.7		
<b>Nutritional difficulties</b>								
· Wholly compensatory	4	13.3	0	0	0	0	52.759	<0.001
· Partial	26	86.7	9	30	4	13.3		
· Supportive educative	0	0	21	70	26	86.7		
<b>Elimination problems</b>								
· Wholly compensatory	6	20	0	0	0	0		

· Partial	23	76.7	9	30	4	13.3	50.042	<0.001
· Supportive educative	1	3.3	21	70	26	86.7		
<b>Sleeping pattern problems</b>	6	20	1	3.3	0	0		
· Wholly compensatory	24	80	3	10	1	3.3	55.456	<0.001
· Partial	0	0	26	86.7	29	96.7		
· Supportive educative								
<b>Social problems</b>	22	73.4	11	36.7	0	0	57.789	<0.001
· Wholly compensatory	7	23.3	3	10	1	3.3		
· Partial	1	3.3	16	53.3	29	96.7		
· Supportive educative								
<b>Hazards exposure</b>	17	56.7	0	0	0	0	57.315	<0.001
· Wholly compensatory	13	43.3	16	53.3	8	26.7		
· Partial	0	0	14	46.7	22	73.3		
· Supportive educative								
<b>Normalcy</b>	6	20	0	0	0	0	50.042	<0.001
· Wholly compensatory	23	76.7	9	30	4	13.3		
· Partial	1	3.3	21	70	26	86.7		
· Supportive educative								

d. Table 6 Showed children’s ability to meet their therapeutic demands based on their health deviation self-care requisites on pre, post and follow up tests. The table revealed that majority of children was partially compensatory on pre intervention. Then they became supportive educative on immediate post and

follow up tests in relation to their hygiene, brush teeth, bathing, change clothes, foot and hair care. So, there was a highly statistical significant difference at 0.001 level of statistical significance.

**Table 6:** Children’s ability to meet their therapeutic demands based on their health deviation self-care requisites on pre, post and follow up test.

Health deviation self-care requisites	Pre-intervention		Post- intervention		Follow up		Chi square X	p-value
	No	%	No	%	No	%		
	30	100	30	100	30	100		
<b>Hygiene by himself</b>	6	20	0	0	0	0	50.042	<0.001
Wholly compensatory	23	76.7	9	30	4	13.3		
Partial	1	3.3	21	70	26	86.7		
<b>Brush teeth</b>	6	20	0	0	0	0	50.042	<0.001
Wholly compensatory	23	76.7	9	30	4	13.3		
Partial	1	3.3	21	70	26	86.7		
<b>Bath/week</b>	4	13.3	0	0	0	0	52.759	<0.001
Wholly compensatory	26	86.7	9	30	4	13.3		
Partial	0	0	21	70	26	86.7		
<b>Change clothes /week</b>	6	20	0	0	0	0	50.042	<0.001
Wholly compensatory	23	76.7	9	30	4	13.3		
Partial	1	3.3	21	70	26	86.7		
Supportive educative								

<b>Foot care</b>	6	20	1	3.3	0	0		
Wholly compensatory	23	76.7	3	10	5	16.7	55.456	<0.001
Partial	1	3.3	26	86.7	25	83.3		
Supportive educative								
<b>Hair care</b>	9	30	1	3.3	0	0		
Wholly compensatory	20	66.7	3	10	5	16.7	56.215	<0.001
Partial	1	3.3	26	86.7	25	83.3		
Supportive educative								
<b>Assistant needed during fistula care</b>	17	56.7	0	0	0	0		
Wholly compensatory	13	43.3	16	53.3	8	26.7	57.315	<0.001
Partial	0	0	14	46.7	22	73.3		
Supportive educative								
<b>Medication awareness</b>	25	83.3	0	0	0	0		
Wholly compensatory	5	16.7	16	53.3	8	26.7	77.356	<0.001
Partial	0	0	14	46.7	22	73.3		
Supportive educative								
<b>Assistant needed to overcome body image problems</b>	20	66.7	0	0	0	0		
Wholly compensatory	9	30	20	66.7	20	66.7	52.653	<0.001
Partial	1	3.3	10	33.3	10	33.3		
Supportive educative								

e. Table 7 Showed distribution of children’s quality of life domains on pre, post and follow up test. It was indicated that the majority of children who had physical health problems their quality of life improved on post and follow up tests than on

pretest (63.33% , 76.6% vs. 0.00) respectively. As well as, more than half of them (60.0%) had good quality of life regarding their limitation of activities and pain perception on post and follow up test.

**Table 7:** Distribution of children’s quality of life domains on pre, post and follow up test.

Children’s quality of life domains	Good quality						Poor quality					
	Pre-intervention		Post intervention		Follow up		Pre-intervention		Post intervention		Follow up	
	No	%	No	%	No	%	No	%	No	%	No	%
General health condition	0	0	14	46.66	22	73.3	30	100	11	36.66	7	23.33
Limitation of activities	0	0	18	60	21	70	29	96.6	12	40	9	30
Physical health problems	0	0	19	63.33	23	76.6	30	100	11	36.66	5	16.66
Emotional health problems	0	0	9	30	20	66.6	29	96.6	10	33.33	6	20
Pain perception	0	0	18	60	30	100	30	100	12	40	5	16.66
Energy and emotions	0	0	15	50	25	83.3	28	93.3	13	43.33	6	20

f. Table 8 Represented total mean scores of children’s quality of life on pre, post and follow up tests. Mean score on pre intervention was 61.16±5.6634 compared to 34.33±2.88

and 33.66±2.32 on post and follow-up tests respectively. It was obvious that a highly statistical significant difference was found at 0.001 level of statistical significance.

**Table 8:** Total mean scores of children’s quality of life on pre, post and follow up test.

Total mean scores	Pre test	Post test	Follow up test	t-test	P -value
X±SD	61.16±5.6634	34.33±2.88	33.66±2.32on	18.52	<0.001

g. Table 9 Revealed the effect size of self-care intervention model on children’s quality of life. The table reflected that the self-care model had high practical effect on children quality of

life immediately post intervention (<0.8) in all quality of life domains.

**Table 9:** Effect size of self-care model of intervention on children's quality of life.

Intervention effect	Outcome
General health condition	0.55
Limitation of activities	0.628
Physical health problems	0.8906
Emotional health problems	0.754
Pain perception	0.624
Energy and emotions	0.345
Total quality of life	0.783

## Discussion

Promotion of self-care activities for children undergoing hemodialysis is crucial in enhancing their ability to perform their daily living activities [6]. Self-care and adaptation to the disease can lessen children's physical problems, enhance the quality of their life and reduce dependency (Hinkle, 2013). The current study hypothesized that children who received the self-care model intervention would have better quality of life on posttest than on pretest. In relation to the study hypothesis, the present study illustrated that children who received the designed self-care intervention had significant improvements on all quality of life domains on immediate post and follow up test than pretest. This could be attributed to the different educational strategies which were provided by the researcher in the form of oral presentations, discussion, doll simulation and explanatory colorful booklets that enhance their quality of life. Such finding came in agreement with Rahimi [7] who conducted a study about "Effect of continuous care model on quality of life in hemodialysis children of Tehran" he reported that using continuous care model had positive effects on several parameters of the hemodialysis children such as their quality of life.

In addition, this finding was consistent with Mohammed [8] who conducted a study about "The effect of an interventional program based on self-care model on health-related quality of life outcomes in hemodialysis children" He revealed that using self-care model had significant effects on all quality of life dimensions including social and physical function, general health, etc. Furthermore, this result was consistent with Hossein [9] who conducted a study about "The effectiveness of self-management program on quality of life among hemodialysis children" He revealed that children's quality of life improved after administering self-care training program and increased children's quality of life. Concerning breathing pattern problems, the present study showed that children's breathing problems decreased on post and follow up test than on pretest (10% & 0.00% vs. 93.3%) respectively. This finding came in line with Agrawal [10] who conducted a study about "Acute intradialytic complications in End Stage Renal Disease on Maintenance Hemodialysis" He reported that all children undergoing hemodialysis suffered from dyspnea, symptomatic

hypoxia and chest pain on pretest and these symptoms were reduced after intervention.

On the other hand, this finding was incongruent with Abd Allah [11] who conducted a study about "Assessment of Self-Care Practice of children on Maintenance Hemodialysis at Cairo University Hospitals" She mentioned that about one third of the children had been rarely experienced breathing symptoms. Regarding fluids intakes and output problems of the studied children, the current study showed that children's fluids intake and output problems decreased on post and follow up test than pretest. This finding was supported by Schmid (2013) who conducted a study about "Adherence to Prescribed Oral Medication in Patients Undergoing Chronic Hemodialysis." He mentioned that more than three quarters of the studied children had fluids and electrolytes imbalance. On the contrary, the finding was incongruent with Farrington [12] who conducted a research about "Studied the demographic and clinical characteristics between fluid-adherent and non-adherent children." He mentioned that most of children adherence to fluids balances that lead to treatment success. From the researcher perspective the nurse should focus the health education on this problem because failure to adhere to fluids and electrolytes balance may lead to increase complications, costs and decreased survival rate.

Regarding nutritional difficulties of the studied children, the current study revealed that the majority of children (90%) suffered from difficulties with nutrition on pre intervention and decreased on post and follow up test. This finding came in a line with Abd Allah [11] and Kabahizi [13] who conducted a study about "Impact of Education Program on Protein Balance among Hemodialysis Patient" They mentioned that around 54.9% of the total sample had troubles in the form of nausea and difficulty in digestion some days while more than one third had hyperacidity and difficulty of chewing. On the other hand, this finding contradicted with Mahmoud [14] who conducted a study about "Continuous ambulatory peritoneal dialysis in Egypt progression despite handicaps" He found that the minority of children reported nutritional troubles symptoms and the most commonly observed GIT disturbances were nausea and vomiting immediately after dialysis session ended.

Concerning sleeping pattern problems of studied children, the present study illustrated that the majority of children (93.3%) suffered from sleeping pattern problems on pre intervention and decreased on post and follow up test (26.7%&23.3%) respectively. This finding came in agreement with Narita [3] who conducted a study about "Etiology and prognostic significance of severe uremic pruritus in chronic hemodialysis patients" He reported that more than 70% of patients complained of sleep disturbance due to itching. Regarding the children's personal hygiene, this study revealed that more than three quarters of the studied children (86.7%) had bad hygiene on pre intervention and improved on post and follow up test (10%&6.7%) respectively. This result congruent with Cerver [15] who conducted a study about "Dental and personal

hygiene management in renal failure children on dialysis” He found 90% of studied children suffer from bad personal hygiene. On the other hand, this finding was incongruent with Parsons (2010) who conducted a study about “Self-Care Ability in Hemodialysis Patients” who described that the sick children should had personal deficits normally expected related to the disease.

In relation to the fistula care, the current study revealed that majority of children had bad fistula care (80%) on pre intervention then improved immediately on post and follow up test (16.7%&16.7%). This finding came in a line with Abd Allah [11] who mentioned that the majority of studied children (90%) had bad shunt care. On the other hand, this finding disagreed with Roger [16] who conducted a study about “Impact of Dialysis Adequacy on Patient Outcomes.” He reported that more than two thirds of the children were used hot compress over the shunt in order to keep the site of shunt clean. Concerning medication awareness, the current study illustrated that the majority of children (83.3%) completely dependent on their caregiver to follow the medication regimen on pre intervention and become independent on post and follow up test (00.0%&00.0%). This finding was congruent with Ricka [17] who conducted a research about “Assessment of Acute Complications in End Stage Renal Disease on Maintenance Hemodialysis” He mentioned that children were non-compliant with medication regimen on pretest while on post-test the majority followed the medication regimen.

Regarding the total mean scores of quality of life of the studied children, the present study illustrated that the total mean scores of quality of life significantly increased after implementation of self-care model which indicated that the provided intervention was effective. This finding was supported by Broumand [18] who conducted a study about “The effect of self-care educational program on decreasing the problems and improving the quality of life of hemodialysis children” He revealed that the mean of quality of life had increased from 46.69 to 54.64 after education. On the other hand, this finding contradicted with Abd El-Tawab [19] who mentioned that most of children undergoing hemodialysis had poor quality of life after intervention where they cannot communicate with others. Regarding effect size of self-care model intervention on children’s quality of life, the current study clarified that self-care model had high practical effect on children quality of life after implementation of self-care intervention (<0.8) in the majority of all aspects of their quality of life. This finding was similar to Ferrans [20] who conducted a research about “Quality of life hemodialysis patients” He mentioned that 89% of children changed their quality of life after receiving the intervention [21-25].

## Conclusion

Based on the current findings, the present study concluded that implementation of self-care model intervention improved quality of life of children undergoing hemodialysis on post and follow-up tests than on pretest [26-30].

## Recommendations

Based on the findings of the present study, the following recommendations are suggested:

- a. Ongoing in-service education programs about self-care model intervention should be designed and implemented at all pediatric hemodialysis units to improve children’s quality of life.
- b. Self-care intervention should be integrated as a part of routine care for children undergoing hemodialysis.
- c. Advanced booklets regarding self-care should be available at each pediatric hemodialysis unit.
- d. Application on larger sample should be done to ensure generalizability of the results.

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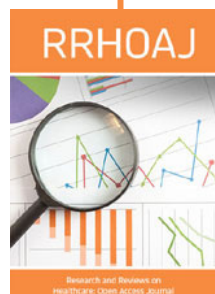
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