

Effect of Educational Program on The self-Efficacy and Quality of Life for Mothers Caring children With Congenital Heart Disease

* AmalA. Abdel-Salam** FatenS. Mahmoud

* Lecturer of Pediatric Nursing/Faculty of Nursing/Benha University

** Assistance Professor of Pediatric Nursing /Faculty of Nursing/Benha University

Corresponding Author: AmalA. Abdel-Salam

Abstract: Congenital heart diseases are of public health concern worldwide as they contribute significantly to childhood morbidity and mortality. Congenital heart diseases account for 1-2/1000 live births and approximately 30% to 40% of all congenital heart disease worldwide. **Aim of the study:** The aim of the study was to evaluate the effect of educational program on self-efficacy and quality of life for mother's caring children with congenital heart disease. **Design:** A quasi-experimental research design was used to conduct the study. **Settings:** This study was carried out in Benha University Hospital. **Sample:** Purposive sample 100 mothers of children aged 0-12 years with congenital heart disease and not receiving any surgery. They were randomly selected children were admitted to Benha University hospital to follow up in pediatric department regardless their characteristics. **Tools of data collection:** Four tools were used; (1) A structured interviewing questionnaire together data in relation to characteristic of the study subjects, mothers knowledge regarding congenital heart disease (definition, causes, type, clinical manifestation of congenital heart disease). (2) Mothers quality of life questionnaire was adapted from standardized likert type rating scale Vahedi, (2000), to assess quality of life of mothers' children with congenital heart disease. (3) Mother self-efficacy scale was adapted from Schwarzer, (2004), to assess self-efficacy of mothers' children with congenital heart disease. (4): Mothers' reported practice sheet it was designed by the researchers in the light of relevant literature review to assess mothers' reported practice regarding congenital heart disease as nutrition, child activity, cardiopulmonary resuscitation, protection from infection and dental care. **Results:** was a highly statistically significant difference observed between the studied mothers total knowledge, self efficacy, quality of life and mothers reported practice regarding to congenital heart disease at pre, post and after three months of educational implementation. **Conclusion:** The mothers of children with congenital heart disease had improved in their quality of life as well as self-efficacy and the mothers had a satisfactory knowledge and practice about caring of children with congenital heart disease. **Recommendations:** The study recommended that, future studies are needed to be conducted on the effect of educational program on the quality of life and self-efficacy of the children with congenital heart disease.

Key Words: Self-efficacy, quality of Life, congenital heart disease, mothers reported practice

Date of Submission: 2018-07-01

Date of acceptance: 2018-09-01

I. Introduction

Congenital heart diseases (CHDs) are the most frequent fetal malformations, with a prevalence of up to 13 per 1000 live births and are associated in 12% of cases with a chromosomal anomaly, such as Down syndrome. The incidence of CHD is reported to be less than 1 per 1000 newborns. Classification of CHD categorizes into 2 types: simple CHD, such as septal malformations (atrial septal defect (ASD) and ventricular septal defect (VSD) and complex CHD combining more than one simultaneous defect, such as the tetralogy of fallot. In recent years, progress in the surgery for CHD has undeniably improved the outcome of the disease, which has considerably increased the life expectancy of children. Sometimes children suffer from CHD improves without treatment. Other defects are so small that they do not require any treatment. Most of the time CHD is serious and requires surgery or medications (Ahmad, et al., 2017).

The cause of a congenital heart defect is often unknown. Certain cases may be due to infections during pregnancy such as rubella, use of certain medications or drugs such as alcohol or tobacco, parents being closely related or poor nutritional status or obesity in the mother. Having a parent with a congenital heart defect is also a risk factor. Signs and symptoms of congenital heart disease depend on the specific type of problem. Symptoms can vary from none to life-threatening. When present they may include rapid breathing, bluish skin, poor weight gain, and feeling tired. Most congenital heart problems do not occur with other diseases. Heart failure is the most common complication that can result from heart defects (Wales, 2018).

Quality of Life (HRQOL) of the children and adolescents with congenital heart disease is primarily affected on the family's quality of life as well. Mothers may sometimes be blamed or discriminated for having a child

with congenital heart defects. Understanding the level of quality of life of the mothers, which is likely to vary in different cultural settings, beliefs and educational status may help to implement educational programs and other interventional measures that may improve the HRQOL of mothers of such children (*Sileshi and Tefera, 2017*). Mothers provide long-term care that often requires extraordinary physical, emotional, social, and financial resources. In addition to being responsible for the physical and emotional care of their child, mothers must coordinate their child's numerous and multifaceted medical treatment, education and developmental interventions while balancing competing family needs, including the needs of their typically developing children (*Hughes, 2016*).

Quality of life is directly related to self-efficacy. Both quality of life and self-efficacy are reduced in the mothers of the children with congenital heart disease. The mothers' self-efficacy is in fact their beliefs and capabilities in nurturing their children and is related to performance of both the family and the child. The mothers' low self-efficacy leads to their tendency toward using negative ways in situation and less utilization of treatment programs and services for their children. The mothers need knowledge and information about the effective ways of taking care of the children. Education is a simple, inexpensive, and necessary instrument for the society's health which eventually changes the behavior, creates a healthy life, and also plays a critical role in health and treatment fields (*Edraki, et al., 2014*).

Significance of the study

The prevalence of congenital heart diseases (CHD) among school children accounted for 1.1%, 0.0. The commonest cardiac defects were ventricular septal defects, pulmonary stenosis, and atrial septal defects. The mere presence of these cardiac defects in school children is an indicator of the poor quality of care provided to this growing childhood population. Worldwide, CHD are relatively common with a prevalence ranging from 1.6-6.6 per 1000 live births. The prevalence was 1.0 per 1000 in Egyptian children, 6.6 per 1000 in Americans,

0.0 per 1000 in Chinese. It causes economic burden and psychological impact on the affected families (*Institute for Health Metrics and Evaluation, 2016*).

The children with congenital heart disease face problems, such as lack of physical ability, early fatigue, exertion dyspnea, infection, developmental delay, dental problems and heart failure symptoms. Managing all of these problems causing stress and anxiety for mothers and imposes heavy financial, physical and mental burden on them. Also they are having many potential stressors including the scheduling of frequent clinic visits, monitoring and limiting their child's activities, and administering medication (*Nematollahi, et al., 2017*).

Aim of the study

This study aimed to evaluate the effect of educational program on self-efficacy and quality of life for mothers caring children with congenital heart disease, through the following:

- 1- Assess knowledge of mothers of children with congenital heart disease.
- 2- Assess self-efficacy and quality of life of mothers of children with congenital heart disease.
- 3- To evaluate the effect of the implementation program on self-efficacy and quality of life of mothers caring for children with congenital heart disease.

Research hypothesis

- The implementation of educational program improve self-efficacy and quality of life for mothers caring children with congenital heart disease.
- The mothers will gain a satisfactory knowledge and reported practices about caring of children with congenital heart disease.

Design:

A quasi experimental design was used in the current study.

Setting

This study was carried out in Pediatric department, Benha University Hospital.

Sample:

A purposive sample of 100 mothers of children with congenital heart disease and their children,

Criteria of the study sample:

- Mother who admitted to Benha University Hospital with their children to follow up in pediatric department regardless their characteristics,
- The mothers of these children should be able to read and write.
- Children aged 0-12 years, free from other medical health problems.
- Children not receiving any surgical intervention.

Tools of data collection

Tool (I): A structured interviewing questionnaire:

It was developed by the researchers after reviewing related literature. It was written in Arabic language and composed of two parts to assess the following:

Part (I): Personal characteristics of the studied sample which include:

A) Mothers characteristics such as age, level of education, occupation, residence, family size and family history.

B) Children characteristics such as name, age, and gender, time of complaint.

Part (II): It concerned with mothers' knowledge regarding congenital heart disease (definition, causes, clinical manifestation, type of congenital heart disease, place of first diagnosis, and type of prescribed treatment).

Scoring system of the knowledge

The mothers answers were compared the model key answer, where 3 scores was given for complete correct answer, 2 score was given for incomplete correct answer and 1 score for wrong answer and unknown answer. The total score of studied student's answers were (4 questions).

The total score for all knowledge was classified as the following

- Good knowledge ≥ 3
- Average knowledge < 2
- Poor knowledge < 1

II) Mothers quality of life questionnaire

It adapted from standardized likert type rating scale (Vahedi, 2010). It was used to assess quality of life for mothers caring children with congenital heart disease. It included 30 questions on general health, physical domain (10 questions), psychological domain (10 questions) and social relations (10 questions). Point-giving to different parameters of this questionnaire were in terms of the type of the question in the form. The total score for all quality of life was classified as the following

- Good quality of life ≥ 20
- Average quality of life < 15
- Poor quality of life < 10

III) Mother self-efficacy scale

The scale adapted from Schwarzer, (2001). It was used to assess self-efficacy of mothers' children with congenital heart disease. It included (10 questions). Point-giving to different parameters of this questionnaire were in terms of the type of the question in the form. The total score for self-efficacy was classified as the following

- High self-efficacy ≥ 20
- Low self-efficacy < 10

IV) Mothers' reported practice sheet

It was designed by the researchers in the light of relevant literature review to assess mothers' reported practice regarding congenital heart disease as nutrition, child activity, cardiopulmonary resuscitation, protection from infection and dental care. Scoring system of the studied mother's practices was calculated as correct practice was scored 3 while correct and incomplete was scored 2 and wrong or incorrect was scored 1. The total score for all practice was classified as the following:

- Good reported practice ≥ 30
- Average reported practice < 20
- Poor reported practice < 10

Tools validity and reliability

The data collection tools were revised by a panel of three experts in the field of pediatric nursing to test face and content validity. Modifications of the study tools were done according to the panel judgment on clarity of sentences, appropriateness of content and sequence of items. Regarding reliability, internal consistency reliability of all items of the tools was assessed using coefficient alpha.

Data collection procedure:

A permission from dean faculty of nursing presented to Benha University for administrator of Benha University Hospital in order to take their approval for conducting the study.

The actual field work was carried out over a period of three months (from 1 January to 31 March 2018). The researchers were available three days/week (Saturday, Monday, and Thursday) from 9am-1pm. The total number of the studied mothers included in the study were (100) mothers and their children. The pilot study were carried out on 10% of mothers (n=10) and they weren't excluded. The mothers who fulfilled the criteria were invited to participate after providing them with a simple and full explanation of the aim and process of the study to obtain their verbal informed consent. The mothers who agreed to participate were interviewed using the

questionnaire sheet. The researchers filled children physiological assessment sheet through their personal characteristic.

Theoretical part: consists of 3 sessions, each researcher take (20) mothers for knowledge, every session contain (30) mothers.

Practical part: Was carried out in 2 session to be (30) mothers in each session and divided on the two researchers to be (15) mothers with each one. Each session started by setting objectives and preparation of the content which covers the following items; the reason behind the application of the sessions, CPR, nutrition, child activity, protection from infection and dental care. Each researcher have (15) mothers. Demonstration and redemonstration were conducted in 3 sessions for each group.

The Educational Intervention:

-First Phase:

A pretest was carried out by using the previously mentioned tools to assess knowledge and reported practice, quality of life and self-efficacy of mothers and their children.

-Second Phase:

This phase included analysis of the pre-test findings and identification of the actual needs of the mothers' and their children knowledge and reported practice regarding to congenital heart disease. Accordingly, the educational program was designed by the researchers using simple Arabic language and different illustrated pictures in order to facilitate subjects' understanding.

-Third Phase (Planning & Implementation):

General and specific objectives of educational program were stated and implemented to satisfy the actual needs of the study subjects; evaluation was carried out immediately after the implementation of the educational program by using the same pretest format as a post test.

- Fourth Phase:

Follow up of the educational program was carried out after 3 months by using the same pre & post test tools.

Ethical considerations

The researchers explained the aim of the study to the mothers and they were informed that the study is harmless. The researchers secured that all the gathered data are confidential and are used for the research purpose only. The mothers were informed that they are optionally allowed either to participate or not in the study and they have the right to withdraw at any time. An oral consent was taken from the mothers.

Pilot study

A pilot study was carried out on 10% of the total sample size (10 mothers) over a period of two weeks to test the validity and applicability of the study tools and to estimate the time needed to fill the questionnaire. No radical modifications were carried out on the study tools so the pilot study subjects were included in the study sample.

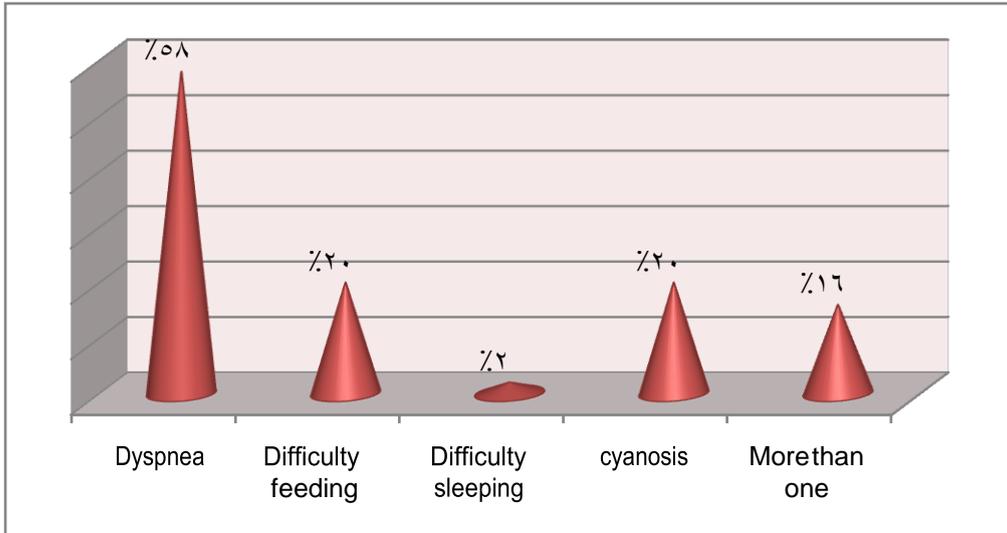
Statistical analysis

The collected data were organized, tabulated and analyzed using electronic computer and statistical package for social sciences (SPSS) version 20. Descriptive statistics were calculated for the data in the form of: Mean and standard deviation for quantitative data, and frequency and distribution for qualitative data. Also in analytical statistics, inter-group comparison of categorical data was performed by using chi square test (X²-value). Also, Pearson correlation coefficient test was used. P value < 0.05 was considered statistically significant (*) while > 0.05 statistically insignificant and P value < 0.01 was considered highly significant (**) in all analyses.

II. Results

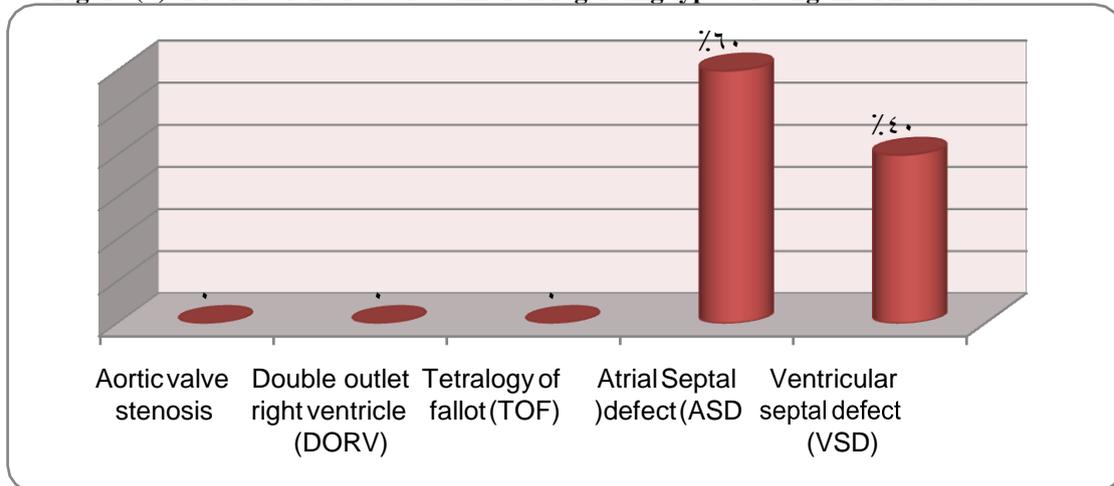
The more than three quarters (73%) of the mothers' age are ranged between 26-30 years old. In relation to mother education, less than three quarters (62%) of the mothers are intermediate education, while (12%) of the mothers are higher education. Moreover, the studied children age are ranged between 3-7 year old. In relation to children gender, less than three quarters (61%) are female.

Figure (1): Distribution of studied children according to signs and symptoms of congenital heart disease.



The figure explained that the 80% of studied children suffered from dyspnea, while cyanosis and difficult feeding was found in 20% of them.

Figure (٢): Distribution of studied children regarding types of congenital heart disease.



The figure showed that, 60% of the studied children were diagnosed with atrial septal defect (ASD), while ventricular septal defect (VSD) diagnosed in 40% of the studied children.

Table (١): Mean and standard deviation children vital signs.

Items	Minimum	Maximum	Mean±Std. deviation
Blood pressure			
-Systolic	١٠٠.٠٠	١٥٠.٠٠	١١٧.٩٠±١٣.٤٨
-Diastolic	٦٠.٠٠	٩٠.٠٠	٧٢.١٠±٧.٩١
Respiration	١٠.٠٠	٢٥.٠٠	١٢.١١±٨.٨٠
Pulse	٩٨.٠٠	١٥٠.٠٠	١٢٩.٠٢±١١.١٥
Temperature	٣٦.٠٠	٣٧.٥٠	٣٦.١٨±٠.٥١١

Table (١): Showed that the mean and standard deviation of systolic of the studied children was 117.90±13.48, when the mean and standard deviation of diastolic of the studied children was 72.10±7.91.

Table (۷): Mean and standard deviation of the studied mothers knowledge score regarding to congenital heart disease at pre, post and after three months from implementation of program (n= ۱۰۰).

Items	Pre-program	Postprogram	Paired t test	P	After three months	Paired t test	P
	$\bar{X}\pm SD$	$\bar{X}\pm SD$			$\bar{X}\pm SD$		
Define of congenital heart disease	1.120±.477	4.540±1.131	13.473	.000	4.070±1.273	12.798	.000
Type of congenital heart disease	1.040±.281	4.560±1.076	13.183	.000	4.360±1.193	12.819	.000
Causes of congenital heart disease	1.00±.000	4.700±.870	13.392	.000	4.300±1.218	12.518	.000
Clinical manifestation of congenital heart disease	1.470±1.234	6.180±1.472	14.675	.000	5.540±1.877	13.714	.000
Diagnose of congenital heart disease	1.410±.865	5.170 ±1.172	15.085	.000	4.780±1.541	14.112	.000
Treatment of congenital heart disease	1.200±.426	3.830±.636	15.038	.000	3.330±1.082	13.283	.000
Complication of congenital heart disease	1.830±.829	3.750±.7703	20.244	.000	3.420±1.065	18.506	.000
Methods of child care	1.980±1.483	7.440±1.671	16.612	.000	6.920 ±2.008	16.056	.000

Table (۷) shows that, there was a highly statistically significant difference in knowledge score of the studied mothers regarding to congenital heart disease at post and after three month as compared to preprogram (P=<.۰۰۰۱).

Table (۸): Total self efficacy scores of the studied mothers' regarding congenital heart disease through the implementation of educational program (No ۱۰۰).

Items	Studied Mothers						X \bar{y}	P- value
	Pre-program		Post -program		After three months			
	No.	%	No.	%	No.	%		
Total self-efficacy score								
Low self efficacy	۷۳	۷۳%	۲۱	۲۱%	۲۰	۲۰%	۸۰.۷۳ ۳ ۰.۰۰۰	
High self efficacy	۲۶	۲۶%	۷۹	۷۹%	۸۰	۸۰%		
Total	۱۰۰	۱۰۰.۰	۱۰۰	۱۰۰.۰	۱۰۰	۱۰۰.۰		

Table (۸): illustrates that, less than three quarter of the mothers (۷۳.۰%) had low self efficacy level at preprogram, while more than three quarter of the mothers (۷۹.۰% & ۸۰%) had high self efficacy at post and after three months of implementation of educational program. Meanwhile, a highly statistically significant difference was observed between self efficacy for mothers at pre, post and after three months of implementation of educational program P= (<.۰۰۰۱).

Table (ε): Distribution of the studied mothers' according to their domains of quality of life at pre, post and after three months of implementation of the program (n=100).

Items	Study group(100)						X ²	P
	Pre-program		Post program		After three months			
	No	%	No	%	No	%		
1-Physical status								
Good	14	14.0	16	16.0	11	11.0	56.815	.000
Average	13	13.0	47	47.0	51	51.0		
Poor	83	83.0	37	37.0	38	38.0		
2-Emotional status								
Good	6	6.0	21	21.0	14	14.0	11.434	.000
Average	38	38.0	39	39.0	42	42.0		
Poor	56	56.0	40	40.0	44	44.0		
3-Social relationship								
Good	4	4.0	17	17.0	15	15.0	10.562	.032
Average	42	42.0	43	43.0	42	42.0		
Poor	54	54.0	40	40.0	43	43.0		

Table (ε): illustrates that, more than three quarter of the mothers (83.0%) had poor quality of life level regarding to physical status at pre of educational program, while almost half of them (51.0% & 38.0%) had good and average quality of life level at post and after three months of implementation of educational program. Regarding to emotional status, more than half of them (56.0%) had poor quality of life level at pre of educational program while almost half of them (21.0%) and (14.0%) had good and average quality of life level at post and after three months of educational program. Regarding to social relationship, more than half of them (54.0% & 56.0%) had average and poor quality of life level at preprogram, while less than half of them (17.0% & 15.0%) had average quality of life level at post program. A highly statistically significant difference was observed between domains of quality of life for mothers at pre, post and after three months of implementation of educational program P= (<.001).

Table (ϑ): Mean and standard deviation of the studied mothers' reported practice regarding to care of congenital heart disease at pre, post and after three month of educational implementation (n=100).

Items	Preprogram	Post program	Paired t test	P	Preprogram	After three month	Paired t test	P
	$\bar{X} \pm SD$	$\bar{X} \pm SD$			$\bar{X} \pm SD$	$\bar{X} \pm SD$		
Nutrition	2.010± .362	2.660±.554	33.148	.000	2.010± .362	2.403±.578	32.872	.000
Child activity	2.030± .171	2.840± .368	40.833	.000	2.030± .171	2.543± .498	40.255	.000
CPR	1.290± .456	2.350±.808	13.751	.000	1.290± .456	1.960± .849	13.492	.000
Prevent from infection	2.110± .314	2.670±.472	51.124	.000	2.110± .314	2.476±.500	40.107	.000
Dental care	1.240± .429	1.720±.636	15.212	.000	1.240± .429	1.543± .618	10.881	.000

Table (ϑ): shows that there was a highly statistically significant difference in mothers reported practice regarding to care of congenital heart disease at post and after three months of educational program implementation as compared to pre of educational program implementation (P=<.001).

Table (٦): Total knowledge, quality of life and reported practice scores of studied mothers' regarding congenital heart disease through the implementation of educational program (No ١٠٠).

Items	Studied Mothers						X ȳ	P- value
	Pre-program		Post -program		After three months			
	No.	%	No.	%	No.	%		
Total knowledge score								
Good	٥	٥.٠	٩٣	٩٣.٠	٨٧	٨٧.٠	١٦٠.٨٩٤	.٠٠٠
Average	٣٩	٣٩.٠	٥	٥.٠	١١	١١.٠		
Poor	٥٦	٥٦.٠	٢	٢.٠	٢	٢.٠		
X̄ ± SD	١١.٤٧ ± ٢.٢٠١		٤٠.١٧ ± ٧.٧١٢		٣٥.٨٧ ± ١٠.٠٤٦			
Total quality of life score								
Good	٨	٨.٠	١٤	١٤.٠	١٢	١٢.٠	١٩٧.٥٧٨	.٠٠٠
Average	١١	١١.٠	١٧	١٧.٠	١١	١١.٠		
Poor	٥٩	٥٩.٠	٤٦	٤٦.٠	٥٢	٥٢.٠		
X̄ ± SD	٣٥.٠٥ ± ١٢.٣٤		٣٧.٦٤ ± ١٣.٥٣		٣٦.٩٦ ± ١٣.٠٨٢			
Total reported practice score								
Good	٧	٧.٠	٨٥	٨٥.٠	٧٩	٧٩.٠	١٨٢.٦٠٠	.٠٠٠
Average	٣١	٣١.٠	٨	٨.٠	١٥	١٥.٠		
Poor	٦٢	٦٢.٠	٧	٧.٠	٦	٦.٠		
X̄ ± SD	١٠.١٨ ± ٨.٥١١		١٧.٠٦ ± ١٥.١١١		١١.٠٥ ± ١٤.٨١١			

Table (٦) shows that there was a highly statistically significant difference observed between the studied mothers total knowledge, quality of life and mothers reported practice regarding to congenital heart disease at pre, post and after three months of educational implementation P= (<.٠٠٠).

Table (٧): Correlation between personal characteristics of studied mothers' and total knowledge, quality of life and practice after educational program implementation.

Items	Pearson correlation coefficient					
	Knowledge score		Quality of life score		Practice score	
	Pearson	Sig	Pearson	Sig	Pearson	Sig
Age	.٠٢٢	.٧٠٦**	.٣٠٦	.٠٠١	.٢١٨	<.٠٠١
Level of educational	.١٦٨	<.٠٠١	.٥٠٥	.٠٠١	.١٤٧	<.٠٠١

**Correlation is significant at the .٠٠١ level (٢-tailed).

Table (٧): Revealed that, there is positive correlation between personal characteristics of studied mothers and total knowledge, quality of life and practice (p value <.٠٠١) after educational program implementation.

III. Discussion

Congenital heart disease (CHD) is the most common congenital malformation present at birth. Congenital heart disease is a developmental abnormality involving structures of the heart or the intra- thoracic great vessels. Nowadays, at least ٩٥% of children born with congenital heart disease survive into adulthood (Dulfer, ٢٠١٤).

This study aimed to evaluate the effect of educational program on the self-efficacy and quality of life for mothers caring children with congenital heart disease

Regarding characteristics of the studied mothers, more than three quarters of the mothers' age are ranged between ٢٦-٣٥ years old, mothers' education, less than three quarters of the mothers' are intermediate education. In relation to the studied children age are ranged between ٣-٦ year old, children gender, less than three quarters are female. This study are accordance with *Moraes, et al.*(٢٠١٣), which study entitled " health related quality of life of children with rheumatic disease: reliability of the Brazilian version of the pediatric quality of life," who reported

that, The distribution of children age are ranged between with 29 children (6.6%) who were 0 to 4 years old and 41 children (36.7%) who were 5 to 12 and 13 to 18 years old, with a slight predominance of females (52.3%). Approximately 67.9% (N=74) of the sample had mild heart disease, 22.0% (N = 24) of the sample had moderate heart disease and 10.1% (N = 11) of the sample had severe heart disease. The most families belonged to the lower economic classes (93.6% of low socioeconomic class family). Concerning the mothers educational levels, 57.8% had attended secondary school, and 19.3% had incomplete elementary education or less (illiterate).

Also this study accordance with *Lee, et al.* (2007), which study entitled "parenting stress in mothers of children with congenital heart disease", who illustrated that, there were 16 infants (31.4%), 14 toddlers (33.3%), 13 preschoolers (33.0%), and 6 school age children (11.4%). Thirty-five children (66.7%) reportedly had cyanotic cardiac anomalies and 16 children (31.4%) had cyanotic cardiac anomalies.

Table(γ): The results of the study confirmed that, there was a highly statistically significant difference in knowledge score of the studied mothers' regarding to congenital heart disease at post and after three month as compared to preprogram ($P < .001$). This study accordance with *Knowles, et al.* (2014), which study entitled "patient reported quality of life outcomes for children with serious congenital heart defects", who showed that, knowledge of mothers regarding the treatment and prognosis of each of the cardiac lesions, scarcity of intervention for any of the congenital cardiac lesions. Also the side effects of drugs, and interactions with other drugs or food were low.

Also this study accordance with *Ndile and Kofi*, (2011), which study entitled "the knowledge of parents of children with congenital heart disease in Dar-ElSalam, Tanzania", who showed that, parents' knowledge levels also improved over time since their children's CHD diagnosis. Also they knew what actions to take in case their children experienced side effects of the medications.

Table(ϛ): The results of the study revealed that, regarding to mothers' self-efficacy, less than three quarter of the mothers had low self efficacy level at preprogram, while more than three quarter of the mothers had high self efficacy at post and after three months of implementation of educational program. This result an accordance with *Gardner*, (2011), which study entitled "parents influence on child social cognition positive", who illustrated that, relationship between parent social self-efficacy and child social self-efficacy while controlling for parent self-esteem. There was a moderate, positive correlation between parent social self-efficacy and child social self-efficacy after controlling for parent self-esteem, $r = .33$, $p = .02$. Parenting stress was significantly related to social support, ambiguity, lack of clarity, and lack of information, but was not significantly related to unpredictability. As expected, mothers who reported higher ambiguity, less clarity, less information, and less social support demonstrated higher parenting stress.

Table(ξ): The results of the study revealed that, quality of life of mothers', a highly statistically significant difference was observed between domains of quality of life for mothers at pre, post and after three months of implementation of educational program $P = (<.001)$. This study accordance with *Arafa, et al.* (2008), which study entitled "quality of life among parents of children with heart disease", who illustrated that, parents of the children with heart disease had significantly worse mean scores in all health related quality of life dimensions when compared to data from parents of children with minor illnesses, except for the body pain. The most striking differences were observed in the vitality subscale (39.66 vs. 50.81) general health (46.2 vs. 53.10) and role physical (39.02 vs. 61.81). The lowest differences although significant were seen for the physical functioning (50.76 vs. 59.84) and social functioning) 63.6 vs. 69.88). The overall test statistic was statistically significant ($P < .001$). Financial situation of the parents were associated with significantly poorer health related quality of life in areas vitality and emotional well-being. Physical and social functioning subscales were affected also by the financing problems of the parents ($F = 8.821$, $P < .005$ & $F = 12.934$, $P < .001$) respectively.

Also study accordance with *Sileshi and Tefera*, (2014), which study entitled "health related quality of life of mothers of children with congenital heart disease", who illustrated that, quality of life of mothers is important in that maternal depression and anxiety can adversely affect the care of a child with chronic condition like congenital heart diseases. Parents, especially mothers may need continuous psychosocial support before or after the child is treated. The psychological stress and impaired quality of life may continue long after the child has undergone corrective surgery or invasive treatment. The parents of children with heart diseases or other chronic illnesses may have higher-level of stress compared with parents of children with other minor illnesses. They are generally at a high risk of anxiety, distress and hopelessness.

Table(θ): The results of the study show that, a highly statistically significant difference in mothers' reported practice regarding to care of congenital heart disease at post and after three months of educational implementation as compared to pre of educational program implementation ($P < .001$). This study accordance with *Srichantaranit, et al.*, (2010), which study entitled "Thai families caring practices for infants with congenital heart disease prior to cardiac surgery", who illustrated that, parents managed their children's care while trying to help other family members, despite significant constraints, live a normal life. Caring practices, such as feeding their children formula, were influenced by televised advertisements and health programs. When their children were in the hospital, parents felt they did not receive sufficient information or hands-on care from nurses.

However, they tried to think positively, took responsibility for providing daily care for their children and remarked, "due to having an overload of children and nurses having many responsibility. The mother children with CHD taking responsibility for children's to giving basic care during hospitalization.

Table(1): The results of the study show that, a highly statistically significant difference observed between mothers total knowledge, quality of life and reported practice at pre, post and after three months of educational implementation $P = (<.001)$. This study accordance with **Ahmad, et al.**, (2017), which study entitled "the impact of congenital heart diseases on the quality of life of patients and their families in Saudi," who illustrated that, mothers still needed information regarding the disease of their children. The direct impact of knowledge and lack of knowledge on mothers QOL. In families lacking knowledge, 42.7% of children had a medium or high impact of CHD on their global QOL (GIS >30%) versus only 22.0% in families who had sufficient knowledge on the disease ($p = .016$).

Also **Barlow, et al.**, (2016), which study entitled "the influence of the training and support programme on the self-efficacy and psychological well-being of parents of children with disabilities," who revealed that, both quality of life and self-efficacy are reduced in the mothers of the children with CHD. The parents' low self efficacy leads to their tendency toward using negative ways of parenting and less utilization of treatment programs and services for their children. In order to feel self efficient, the parents need knowledge and information about the effective ways of taking care of the children. Also this study agreement with **Moghtaderi and Refahi**, (2011), which study entitled "the effectiveness of life values training (happiness, peace, respect, responsibility, cooperation and tolerance) to child on their social growth and them parents self- efficacy," who showed that the parents' quality of life and self-efficacy significantly improved after the intervention. Training the parents increases their knowledge and improves their performance. This can subsequently have caused changes in the parental performance and self-efficacy. Education can improve the life quality and self-efficacy of the parents of the children suffering from chronic diseases. In addition this study agreement with **Pramila and Chandni**, (2017), which study entitled "knowledge of mothers regarding home care of children undergone cardiac surgery with a view to develop an information booklet," who revealed that care of the child with congenital heart disease include, nutrition, safe administration of prescribed medications, exercise and activity, detection of early complications remains the aspects that are required for the parents to learn about. Parental knowledge on management of pain, fever, nutrition, activity, signs of early complications is of utmost importance and a better understanding to seek a doctor or taking child to hospital.

Table (2): The results of the study show that, there is positive correlation between personal characteristics of studied mothers and total knowledge, quality of life and practice (p value $< .001$) after educational program implementation. This study agreement with **Tallon**, (2012), which study entitled "mothers' knowledge and understanding of their child's care at the time of cardiac surgery," who reported that characteristics of parents including education, mental and physical health, and motivation are known as human capital. Parents with a university degree have more educational sets than parents with a high school diploma. Training the parents increases their knowledge and improves their performance. This can subsequently have caused changes in the parental performance and self-efficacy. In the line of the study **Lobel et al.**, (2011), which entitled "knowledge of congenital heart disease of mothers," who showed that mothers with higher education were performing better than mothers at lower levels, parents experience a mixture of shock, denial, fear, anger and an intense sense of sadness for an instance their children is diagnosed with congenital heart defect. In spite of these emotions they must learn to be competent on providing care to meet their child's special needs.

Also, this study accordance with **El Mahdi**, (2009), which study entitled "parental knowledge, attitudes and practice towards their children's congenital heart disease and its impact on their growth in Sudan Heart Centre," who revealed that the positive correlation between parental educational level and occupation with their knowledge about (CHD). The majority of the parents (74%) were found to have poor knowledge about (CHD). While only (26%) of the parent were found to have good knowledge. This reflects the insufficient knowledge and inadequate information attained by the parents. The parents' knowledge about their children congenital heart disease is generally poor but did not correlate with their growth. Better educational programs and nutritional re-evaluation are recommended, along with providing better health care facilities and developing the concept of team management.

This finding is in concurrence with **Jamab, et al.**, (2011) which study entitled "the effectiveness of parent training on quality of life and self-efficacy of mothers of children with autism," showed that the educational intervention improved the life quality of the mothers of the infants suffering from congenital heart disease. Statistical significant increase was observed in the life quality scores and self-efficacy of the intervention group caregivers after the training ($P < .001$). The findings of the present study also confirmed the effect of the educational program on the quality of life and self-efficacy of the mothers of the infants with CHD the parents' quality of life and self-efficacy significantly improved after the intervention.

IV. Conclusion

According to the results, the implementation of the educational program for the mothers of children with congenital heart disease had improved in their quality of life as well as self-efficacy and the mothers had a satisfactory knowledge and practice about caring of children with congenital heart disease.

V. Recommendations

- The educational program regarding congenital heart disease can prevent further complication according to guideline.
- Guidelines for young children and their parents about physical activity with congenital heart disease.
- Future studies are needed to be conducted on the effect of educational program on the quality of life and self-efficacy of the children with congenital heart disease.

References

- [1]. Ahmad.S.,Alshammasi, Z.H. andHiggi, R.E.(2017): The impact of congenital heart diseases on the quality of life of patients and their families in Saudi. Arabia Saudi Medical Journal. Vol 37(2).Available at: www.SMJ.org.sa
- [2]. Arafa, M.A.,Zaher, S.R., El-Dowaty, A.A. andMoneeb, D.E.(2018): Quality of life among parents of children with heart disease. Health and Quality of Life Outcomes. Vol 18(1). Available at:https://www.biomed central .com/
- [3]. Barlow, J., Powell, L. and Gilchrist, M.(2016): The influence of the training and support programme on the self-efficacy and psychological well-being of parents of children with disabilities: A controlled trial. Complementary Therapies in Clinical Practice. Vol 22(1).
- [4]. Dulfer, K., Duppen, N., Helbing, W.A. andUtens, F.M.(2015):Associations between exercise capacity, physical activity, psychosocial functioning in children with congenital heart disease. European journal of preventive cardiology.
- [5]. Edark, I.M.,Mojgan, K.,Beheshtipour, N.,Amoozgar, H. and Najaf, Z.(2015):The effect of educational program on quality of life and self-efficacy of the mother infant with congenital heart disease. International Journal of Community Based. Nurse Midwifery.
- [6]. El Mahdi,L.(2016):Parental knowledge, attitudes and practice towards their children's congenital heartdisease and its impact on their growth in Sudan Heart Centre. Master thesis. University of Khartoum
- [7]. Gardner, D.M.(2016):Parents influence on child social cognition. Master thesis.Marquette University. Available at: e publications. Marquette. edu/ theses-open/116
- [8]. Hughes,M.(2016):Adjustment in siblings of children with chronic health conditions: Associations with parent depression, anxiety and stress. Available at: www.duo.Uio.no/university of Oslo
- [9]. Institute for Health Metrics and evaluation,(2016):What causes the deaths' in Egypt.Available at:https://www.health data.org
- [10]. Jamab, S., Abadi, H., Mashhadi, A., Asgharinekah, M. (2016):The effectiveness of parent training on quality of life and self-efficacy of mothers of children with autism. Journal of Fundamentals ofMental Health.
- [11]. Knowles, R.L.,Day, T.,Wade, A.,Bull, C. and Wren, C.(2016):Patient reported quality of life outcomes for children with serious congenital heart defects. Vol 94. Available at:https://adc.bmj.com/
- [12]. Lee,S.,Yoo,J.S. andYoo, A.(2016):Parenting stress in mothers of children with congenital heart disease. A stan Nursing Research .vol 1 (1).Available at:Sunhee211@yahoo.com.
- [13]. Lobel, A., Geyer,S., Grosser,U. and Wessel,A.(2016): Knowledge of congenital heart disease of mothers.Congenital Heart Disease.Vol 1(1).Wiley Periodicals, Inc. Available at:https://onlinelibrary.wiley.com/doi/pdf/10.1111/j.
- [14]. Moghtaderi, N. and Refahi, Z.(2016): The effectiveness of life values training (happiness, peace, respect, responsibility, cooperation, tolerance) to child on their social growth and their parents self-efficacy. Research In Curriculum Planning.
- [15]. Moraes, A.N.,Terrerri, M.T., Hilario, M.O. and Len, C.A.(2016):Health related quality of life of children with rheumatic disease: reliability of the Brazilian version of the pediatric quality of life. Biomed Central.Com. Inventory cardiac module scale. Health and Quality of Life Outcome. http:// www.hqio.com/content
- [16]. Ndile, M. andKohi,T.(2016):The knowledge of parents of children with congenital heart disease in Dar-esSalam,Tanzania. Africa Journal of Nursing and midwifery.Vol 13(1).Accessed on: 22/2/2016
- [17]. Nematollah, M., Sabzevari, S., Mizaei, T. and Ravari, A.(2016): Strategies of mothers in life management along with congenital heart disease: valuable experience of Iranian mothers. British Journal of Medicine and Medical Research. Vol 16(2).Available at: www.sciencedomain.org
- [18]. Pramila, P. andChandni, M.(2016):Knowledge of mothers regarding home care of children undergone cardiac surgery with a view to develop an information booklet. An Official Journal of NMC. Vol 3(1).
- [19]. Schwazer, R.(2016):General self-efficacy scale. Available at: http://User page.fu-berlin.de/u health/healself.pdf
- [20]. Sileshi, L. and Tefera, E. (2016):Health related quality of life of mothers of children with congenital heart disease.in sub-Saharan setting:cross sectional comparative study.Sileshi and Tefera BMC Notes. Available at:www.doi 10.1186/
- [21]. Srichantaranit, A., Chontawan, R.,Yenbut, R. and Ray, L.(2016):Thai families caring practices for infants with congenital heart disease prior to cardiac surgery. Vol 12(1).Pacific Rim International JournalNurs Res
- [22]. Tallon,M.(2016): Mothers' knowledge and understanding of their child's care atthe time of cardiac surgery.Master thesis. Nursing Science. Curtin University
- [23]. Vahedi, S.(2016):World health organization quality of life scale (WHOQOL-bref)analyses of their item response theory properties

* AmalA. Abdel-Salam. "Effect of Educational Program on The self-Efficacy and Quality of Life for Mothers Caring Children with Congenital Heart Disease". IOSR Journal of Nursing and Health Science (IOSR-JNHS) , vol. Υ, no. ξ , Υ • 1^, pp. 6^λ-Υλ.