Effect of Educational Instructions on Mothers' Self-Efficacy Regarding Quality of Life for their Children with Congenital Heart Diseases

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Abstract

Background: Children with congenital heart diseases face serious problems which affect the quality of their life so; promoting mothers' self-efficacy may affect quality of life of their children with congenital heart disease. The study **aimed to** evaluate the effect of educational instructions on mothers' self-efficacy regarding quality of life their children with congenital heart diseases. Design: A quasi- experimental research design was used in the present study; the study was conducted at inpatient and outpatient Pediatric Department of Tanta Main University Hospital which affiliated to Ministry of Higher Education and scientific Research and Kafer El-Shiek Main University Hospitals. **Subjects and Method:** a purposive sample of seventy children and their mothers were involved in the present study the children aged from six to twelve years old. **Three Tools** were used: Mothers' knowledge structured questionnaire, the children's quality of life scale and the mothers' self-efficacy scale. **The results** revealed that mothers' knowledge had improved after the educational instructions implementation with positive correlation between total mothers knowledge about congenital heart diseases and their self-efficacy which in turn improve the quality of life of their children. **The study concluded that the** educational instructions had great effect in improving mothers' knowledge, self-efficacy and quality of life of their children with congenital heart diseases. **The study recommended** that periodical educational program should be conducted for nurses to be knowledgeable about congenital heart diseases and nursing caring of these children.

Keywords: Children, Congenital heart diseases, Educational instructions, Mothers**,** Quality of life and Self-efficacy

Introduction

Congenital heart diseases: is a structural abnormality of the heart and great vessels that occurs before birth. The worldwide congenital heart diseases prevalence is thought to be between six and thirteen per thousand live births. Owing to increased rates of diabetes, obesity, andconsanguineous marriage, this frequency is higher in Arab Nations and frequent lesions included pulmonary stenosis, transposition of the major arteries, patent ductus arteriosus, patent foramen ovale, ventricular septal defect, and teratology of fallot **(El-Gilany A.et.al, 2017).**

Congenital heart disease is caused by anything that interferes with the heart normal development. It is believed that the majority of instances arise from problems that impact the heart development during the first six weeks of pregnancy **(Jarrell DK,et.al,2019)**. At this point, the heart is changing from a basic tube-like structure to a form that is closer to a fully developed heart. While certain factors are known to raise the risk of

congenital heart disease, most cases lack a clear explanation, but these causes may be genetic or non-genetic.

While there are many approaches to categorize congenital cardiac abnormalities, two clinical characteristics serve as the basis for a therapeutically helpful approach: whether cyanosis is present or not (cyanotic, a cyanotic and the pulmonary vascularity type). **(Rohit and Shrivastava ,2018).**

The most common clinical manifestations of children with congenital heart disease are palpitations, fatigue, murmur, dyspnea, growth retardation, recurrent chest infection and cyanosis. These manifestations differ from a child to another. The more the severity of these symptoms, the lower quality of life of the child with congenital heart diseases **(Edelson J,et.al,2018)**.

The term quality of life seeks to encompass an individual's or populations' overall well-being with regard to both positive and negative aspects of their life, as well as relationships, education level, status in society, independence, feeling of security and safety, social belonging, physical and mental well-being are common elements of quality of life **(Teoli D, Bhardwaj A 2020)**. The nurse should give the mother precise information regarding congenital heart disease to improve mothers' self-efficacy and enhance quality of life of their children with congenital heart disease. Children with inherited cardiac conditions demand tailored care plans based on their requirements in terms of their physical, mental, developmental, and educational demands. Immunizations, dental treatment, healthy weight management, and developmental support are examples of regular health maintenance activities that need to be offered. Among the many beneficial roles that nurses' play includes reducing social isolation, offering psychosocial support and counseling to mothers and children. **(Elsayed S,et.al,2020).** Mothers' self-efficacy is influenced by their levels of effort for a specific task and perception of efficacy and the ability to manage a task successfully and effectively. Both quality of life and self-efficacy related to each other, improving mothers self-efficacy regarding their children with congenital heart diseases will be reflected in improving the quality of life of their children **(Liu H,et.al,2022)**.

Significance of the study

Global estimates place the frequency of congenital heart disease 8/1000 live births and 1.0 per 1000 in Egyptian children; in critical instances, death was 18%, but in non-critical cases, it was 8%. Early detection of critical CHD reduces mortality (16% vs. 27% for late diagnosis). The quality of life is the indicator about the child health condition, comfortable, and ability to participate in life events. The presence of the congenital heart malformations in children may affect children's quality of life domains. Self-efficacy and quality of life are closely associated. **(Eckersley L,et.al,2016),** So, the study aimed to evaluate the effect of educational instructions on mothers' self-efficacy regarding quality of life their children with congenital heart diseases.

Aim of the Study

The study aimed to evaluate the effect of educational instructions on mothers' self-efficacy regarding quality of life for their children with congenital heart disease.

Research hypotheses

Mothers were expected to have better self-efficacy and improvement of quality of life for their children who have congenital heart disease.

Subjects and Method

Subjects

Research design:- a quasi-experimental research design was utilized. **Subjects** Purposive sample was made up of 70 children and their mothers was collected randomly from the previously mentioned setting (35 children from each hospital).The sample size calculation based on type I error0.05and confidence level 95%.

Inclusion criteria of children included:

- Children's age from 5 to 12 years old

- Both genders

- Free from any acute or chronic diseases.

- Confirmed diagnosis with congenital heart disease, Ventiricular Septal Defect(VSD), Atrial Septal Defect(ASD), Patent Ductus

- Arteriouses (PDA),Pulmonary stenosis

Setting: The study conducted at inpatient and outpatient Pediatric Department of Tanta Main University Hospital which affiliated to Ministry of Higher Education and scientific Research and Kafer El-Shiek Main University Hospitals. The inpatient unit at Tanta university hospitals consists of 5 beds without mechanical ventilators and has one crush cart. Inpatient unit in Kafer El-shiekh Main University Hospitals consist of 7 beds and one isolation room and contain 4 mechanical ventilators and one crush cart.

Tool of data collection

Tool I: Mothers' knowledge structured questionnaire about their children with congenital heart disease .It consisted of two parts

Part 1:

a) Socio-demographic data of the children with congenital heart diseases included: age, sex, birth order, educational level, medical diagnosis and clinic visits.

b) Socio-demographic data of the mothers included: age, educational level and occupation, residence, marital status, family size and family history.

Part 2: Mothers' knowledge about congenital heart diseases such as meaning of congenital heart diseases , types, predisposing factors, signs and symptoms, complications ,treatments, medication administration and child nutrition, hygiene and activity**(Jiang, S.et.al.2023)**.

Mothers' knowledge was scored as follows:

- Correct and complete answer was scored (2),

- Correct and incomplete answer was scored (1),

- Wrong answer or don't know was scored (0).

Total score of mothers' knowledge was calculated as the following:

- Less than 60% was considered low level of knowledge.

- From 60– <70% was considered moderate level of knowledge.

- From 70–100% was considered high level of knowledge.

Tool II: Children's quality of life scale: The quality of life scale was adopted from WHO QoL scale which used to determine the level of QoL for children with congenital heart diseases**(Huang C.et.al.2017), (Lindner P.et.al,2016)**.

The quality-of-life domains as:

1. **Physical:** Discomfort, energy, sleep, medical care, and capacity to carry out everyday tasks.

2. **Psychological:** Good emotions, self-worth, cognition, education, focus and memory, physical attractiveness and image, and satisfaction of unpleasant emotions.

3. **Social:** Parent-child interactions, peer ties, and social support.

4. **Health environment:** financial resources, freedom, physical safety and security, chances to learn new information and skills, possibilities for leisure and recreation, and the home environment.

5. **School function:** Pleasure in school, classmate's friendship, comfort, educational ability, teacher interaction, school caring.

   Scoring system: This scale was classified into: 5 points scale ranging from "zero to 4" from never to always for each domain, the scores of the items was summed up and the total was divided by the number of the items, giving a mean score for the part, these scores was converted into a percent score, means and standard deviation was computed as: Zero= poor, One = acceptable, Two = good, Three = very good, Four = excellent

   The total score for quality of life was calculated as the following:

   less than 60% = poor and 60% or more = good .

Tool III: Mothers' self-efficacy scale. This scale was developed by Schwarzer and Jerusalem 1995 and adopted by the researcher. Ten items scale were used to assess perceived self-efficacy as(the ability of the mother to achieve the health needs of her child, the ability of the mother to deal with emergency events that may happen to her child….) **(Tus J.et.al.2021).**

The self-efficacy was scored by likert scale from one to four as : one = Not at all true, two = Hardly true, three = Moderately true , four = Exactly true

The total score for self-efficacy will be classified as the following

- High self-efficacy≥ 60%.
- Low self-efficacy<60%.

Method

1. Official permission to conduct the study was obtained from Faculty of Nursing, Tanta University and from the administrators of inpatient and outpatient of pediatric department of Tanta and Kafer el-shiekh University Hospitals after explaining the aim of the study.

- Ethical committee approval obtained from Faculty of nursing, code Number of approval is: 110-10-22

2. Ethical and legal considerations:

- Nature of the study was not causing any harm or pain to the entire sample.

- Confidentiality and privacy was taken into consideration regarding the data collection.

- Written informed consent was taken from child in the study, approval of scientific publication and including the right to withdraw at any time.

3. Tools development: the study tools were developed based on review of related literature: three tools were developed.

4. Content validity: the study tools were presented to a jury of five experts in the area of specialty to check content validity and clarity of the tools.

5. Reliability: the suitable statistical test was used for testing questionnaire reliability.

6. A pilot study was carried out on 10% of mothers to test the tool for its clarity, applicability, feasibility and the necessary

modification will be done. Pilot study was excluded from the study.

7. Mothers' knowledge structured questionnaire was filled in the clinical area by mothers in presence of the researcher (Tool I).

8. Children quality of life scale was modified and translated into Arabic form by the researcher. (Tool II).

9. Mothers' self-efficacy scale for adults developed by Schwarzer and Jerusalem (1995) and adopted form the researcher. (Tool III)

10. The present study was conducted at four Phases of educational instruction Including assessment, planning, implementation and evaluation phase.

Phases of the study

1- **Assessment Phase:** It was carried out to gather initial data and evaluate the child who fulfills the inclusive standards. (Tool **I).**

Planning Phase

-Establishing goals

-Content preparation, including an explanation of the rationale for the session's application.

-Seven groups consisted of ten mothers in each group.

-Write the questionnaire in simple Arabic language to be suitable for the child and his mother.

-Preparation of the environment to be quite and free from any distraction

-The sessions were performed during the morning shifts, starting at nine in the morning. About 20 to 30 minutes were needed to finish each sheet.

3-Implementation Phase

- Educational instructions were conducted independently for each group by conducting a series of sessions in accordance with the mothers under study's actual needs assessment.

- The educational instructions were delivered to 5 sessions, two / week and last week one session.

- Each session was last roughly 30 minutes, including discussion times based on the mothers' input and advancement.

- Different methods and media of teaching were used including; lectures, note book etc.)

- Duration of the data collection was within six months from January 2023 to June 2023.

The content of the educational intervention was presented in the following sequences

The first session: It focused on the meaning of congenital heart diseases, types and predisposing factors of congenital heart diseases.

The second session: It focused on warning signs and symptoms of the congenital heart diseases, complications and severity of the diseases.

The third session: It focused on the treatment of congenital heart diseases, and medication administration (route, type, etc.)

The fourth session: It included instructions about items of quality of life for children with congenital heart disease that includes five domains: physical, psychological, social, health environment and school function.

The fifth session: It included instructions for the mothers about care that includes: nutrition, warning signs that being noticed on her child and when she must visit the doctor, over protective behaviors (preventing the child from practicing his normal safe activities), school function and child hygiene

4. Evaluation Phase: - The same assessment instruments were used to collect data about mothers' knowledge, self-efficacy, and

quality of life for their children with congenital heart disease both immediately following (post-test) and one month following the implementation of the educational instructions (follow-up). The results were compared to pre-test levels.

Statistical analysis

Version 28 of the statistical computer tool SPSS was used to arrange, tabulate, and statistically analyze the data that had been gathered. The range, mean, and standard deviation were computed for quantitative data. To compare qualitative data, the Chi-square test ($\chi2$) was employed. Pairing samples t-test was used to compare the means of two variables within a group. The F-value of analysis of variance (ANOVA) was calculated to compare the means of variables for more than two variables or for variables during three different intervention periods in a group.The Pearson and Spearman correlation coefficients, r, were used to assess the correlation between the variables. The significance level used to interpret the findings of the significance tests (*) was set at P<0.05. Additionally, a highly significant threshold of P<0.01 was used to the interpretation of the significance test results (**). (**Burt, B. 2013).**

Results

Table (1): it was show Percentage distribution of the studied children with congenital heart diseases according to their socio-demographic characteristics; It was evident that 41.4 % of the total studied children their age ranged from 8 to 10 years, more than half (54.29%) of them are female, more than one third (34.29%) of the them were the third birth order and more than half (55.71) of them live in a rural area. Regarding children's academic level it was found that 24.29% of the total studied children are at the first level of the primary school and

mean of their visits to the physician are Mean ± SD 3.76±0.984.

Table (2) It was show Percentage distribution of the studied mothers according to their socio-demographic characteristics. It illustrates that one third of the studied mothers (31.43 %) their age were (35-40) years, while more than two thirds of them (67.14 %) their family number less than 5 with Mean ± SD 5.00±0.993 and 52.86% of the total studied mothers graduated from a university while (78.57%) of them were a housewife and (84.29%) of them were married. The table also shows that more than half (61.43%) of the studied children didn't have family history of congenital heart diseases.

Table (3): It was represent the mothers total knowledge levels about congenital heart diseases. It was Evident that the majority (95.71 %) of the studied mothers have low knowledge level about congenital heart diseases before the educational instructions, while all (100%) and 80% of them had high level of knowledge immediately after and after one month of the educational instructions respectively.

With Mean ± SD: 5.21±3.848, 19.59±0.860, 14.91±3.538 correspondingly pre, immediately post and after one moth of the educational instructions, With P significant at P<0.05

Table (4): it was representing the total levels of quality of life for children with congenital heart disease. It was shows that only 27.14% of the studied children with CHD had good quality of life while all of them (100%) and 78.57% r had good quality of life immediately after and one month after implementation of educational instructions respectively. Regarding the total mean score of quality of life of the child with CHD it was found that

mean ± SD improved from 79.41±28.494 to 141.30±13.599, 127.51±25.811 immediately after and one month after the implication of the educational instructions respectively. Also there were statistically significant differences of total mean scores of quality of life of the studied children with congenital heart disease, With P=0.00 before, immediately and one month after the implementation educational instructions.

Table (5): It was illustrate the total levels of mothers' self-efficacy regarding caring of their children with congenital heart disease.it was observed that only 4.29% of the studied mothers have high self-efficacy level regarding caring of their children with congenital heart disease before the educational instructions, and this percentage improved to 100% and 94.29% immediately and one month after implementation of educational instructions respectively. Also this table presents that the mean ± SD of the total level of mothers' self-efficacy regarding caring of their children with CHD improved from 18.99±3.888 to 35.89±3.755, 31.27±3.021 immediately after and one month after the

implication of the educational instructions respectively, and there were a statistically significant differences of the total level of mothers' self-efficacy regarding caring of their children with CHD ,With P=0.00 before, immediately and one month after the implementation educational instructions.

Table (6): Correlation between total mother's levels of knowledge, quality of life of their children and mothers' self-efficacy regarding caring of their children with congenital heart disease. It was shows that there were a positive correlation between total mothers knowledge and the level of quality of life of their children with CHD r = 0.042, 0.013, 0.123 pre and immediate post and post one month of the implementation of the educational instructions respectively. The table also describes significant positive correlation between mother's level of knowledge and their mothers' self-efficacy regarding caring of their children with CHD. With r=0.701, o.533, 0.367 pre and immediately and after one month of the implementation of the educational instructions respectively, with statistically highly significant differences at level P<0.01.

Table (1): Percentage distribution of the studied children with congenital heart diseases according to their socio-demographic characteristics

Characteristics	The studied children (n=70)	
	N	%
Age (in years)		
▪ (6<8)	22	31.43
▪ (8<10)	29	41.43
▪ (10-12)	19	27.14
Range **Mean ± SD**	**(6-12)** **8.29±1.897**	
Gender		
▪ Male	32	45.71
▪ Female	38	54.29
Residence		
▪ Urban	31	44.29
▪ Rural	39	55.71
Birth order		
▪ First	5	7.14
▪ Second	19	27.14
▪ Third	24	34.29
▪ Fourth	17	24.29
▪ Fifth	5	7.14
educational level		
▪ First	17	24.29
▪ Second	14	20.00
▪ Third	10	14.29
▪ Fourth	11	15.71
▪ Fifth	7	10.00
▪ Six	6	8.57
▪ First preparatory	5	7.14
Frequency of the doctor visit Range Mean ± SD	(1-5) 3.76±0.984	

Table (2): Percentage distribution of the studied mothers according to their socio-demographic characteristics.

Characteristics	The studied mothers (n=70)	
	N	%
Age (in years)		
▪ (20-<25)	5	7.14
▪ (25-<30)	14	20.00
▪ (30-<35)	21	30.00
▪ (35-40)	22	31.43
▪ (>40)	8	11.43
Family number		
▪ <5	23	32.86
▪ ≥5	47	67.14
Range	**(3-7)**	
Mean ± SD	**5.00±0.993**	
Educational level		
▪ Illiterate	2	2.86
▪ Basic education	9	12.86
▪ Secondary	22	31.43
▪ University	37	52.86
Occupation		
▪ Housewife	55	78.57
▪ Employee	15	21.43
Marital status		
▪ Married	59	84.29
▪ Divorced	11	15.71
Family history		
▪ None	43	61.43
▪ CHD	6	8.57
▪ Heart disease	6	8.57
▪ Hypertension	5	7.14
▪ IDM	10	14.29

Table (3): The mothers total knowledge levels about congenital heart diseases.

Total knowledge level	The studied mothers (n=70)						χ^2 P
	Pre		Immediate		Post a month		
	N	%	N	%	N	%	
▪ Low	67	95.71	0	0.00	5	7.14	**167.46**
▪ Moderate	2	2.86	0	0.00	9	12.86	**0.000***
▪ High	1	1.43	70	100.00	56	80.00	
Range	**(0-15)**		**(16-20)**		**(7-20)**		**402.17**
Mean ± SD	**5.21±3.848**		**19.59±0.860**		**14.91±3.538**		**0.000***

          <60 % Low   (60<70) % Moderate   ≥ 70% High
* Statistically significant at level P<0.05

Table (4): The total levels of quality of life for children with congenital heart disease.

Level of quality of life	The studied children (n=70)						χ^2 P
	Pre		Immediate		Post a month		
	N	%	N	%	N	%	
▪ high	51	72.86	0	0.00	15	21.43	**91.08**
▪ low	19	27.14	70	100.00	55	78.57	**0.000***
Range	**(26-149)**		**(106-164)**		**(82-162)**		**133.29**
Mean ± SD	**79.41±28.494**		**141.30±13.599**		**127.51±25.811**		**0.000***

          <60% Poor   ≥60% Good
* Statistically significant at level P<0.05

Table (5):   Total levels of mothers' self-efficacy regarding caring of their children with congenital heart disease.

Maternal self-efficacy level	The studied mothers (n=70)						χ^2 P
	Pre		Immediate		Post a month		
	N	%	N	%	N	%	
▪ Low	67	95.71	0	0.00	4	5.71	**180.31**
▪ High	3	4.29	70	100.00	66	94.29	**0.000***
Range	**(14-30)**		**(29-40)**		**(25-40)**		**417.88**
Mean ± SD	**18.99±3.888**		**35.89±3.755**		**31.27±3.021**		**0.000***

<60% Low   ≥60% High
* Statistically significant at level P<0.05

Table (6): Correlation between total mother's levels of knowledge, quality of life of their children and mothers' self-efficacy regarding caring of their children with congenital heart disease

	Total knowledge level The studied mothers (n=70)																	
	Pre						Immediate						Post a month					
	Low		Moderate		High		Low		Moderate		High		Low		Moderate		High	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Level of QOL ▪ Poor ▪ Good	51 16	72.86 22.86	0 2	0.00 2.86	0 1	0.00 1.43	0 0	0.00 0.00	0 0	0.00 0.00	0 70	0.00 100.00	2 12	2.86 17.14	0 9	0.00 12.86	13 34	18.57 48.57
χ^2 , P	8.41 , 0.015*						-						3.96 , 0.138					
r , P	0.042 , 0.731						0.013 , 0.916						0.123 , 0.311					
Maternal SEL ▪ Low ▪ High	67 0	95.71 0.00	0 2	0.00 2.86	0 1	0.00 1.43	0 0	0.00 0.00	0 0	0.00 0.00	0 70	0.00 100.0	1 13	1.43 18.57	0 9	0.00 12.86	3 44	4.29 62.86
χ^2 , P	24.76 , 0.000*						-						0.637 , 0.727					
r , P	0.701 , 0.000**						0.533 , 0.000**						0.376 , 0.001**					

r: Pearson' correlation coefficient

* Statistically significant at level P<0.05

** Statistically highly significant at level P<0.01

Discussion

Congenital heart diseases is a structural abnormality of the heart and great vessels that occurs before birth, which affect the child body in many aspects such as physical activities, body weight school function, and some social and psychological status. The results of the present study showed that nearly half of studied children were aged from eight to ten years it may be due to that most affected age of the children is eight that because the eight-year-old child is in school age which characterized by doing many activities such as aerobic activity include activities like walking, running, or anything that makes their hearts beat faster, which may interferes with their disease and appearance of the symptoms.

This result in accordance with **El-Said D et al., (2023)** who showed that the age of the studied children was six to eight year, also **Elsayed M. et al., (2020),** revealed that the age of more than half of the children under study was 6:8 years. **Ladak et al., (2018)**

who revealed that roughly fifty percent of the study group had ages ranging from 5 to 9 years. In the same context **Ruggiero et al., (2018)** found that more than half of them were between the ages of 5 and 8. In agreement with the study, **Elsobky et al., (2018)** reveled that half of he studied children aged 6:12 years old.

The present study evident that more than half of the studied children are female. Similarly **Abdel-Salam et al., (2018)** revealed that less than three quarters are female and also **Ujuanbi (2016)** clarified that more than half of them were females. In contrary **Elsayed M.et.al. (2020),** reported that more than half of studied children were male, **Elsobky et al., (2018)** reveled that half of the studied sample were males, and **Abou-Taleb et al., (2016)** reported that more than three quarter of studied sample were males.

The current study made it clear that more than half of the children under investigation were from rural areas. These findings were supported by **Elsayed M. et al., (2020),** who illustrated that the highest percent of studied children were from rural area. Also this finding was came in the same line with finding of **Ibrahim& Awad (2018),** discovered that nearly seventy-five percent of the sample under study came from rural areas. This result was in disagreement with that of **Elshazali et al., (2018),** who clarified that the majority of the children in the study—more than two thirds—came from cities. This is may be due to the children in rural area doesn't have sufficient medical facilities for the care of pediatric heart diseases like urban area.

Considering the mothers' socio-demographic characteristics, the present study found that, one third of the studied mothers their age ranged from 35 to 40 years

and more than half of the total studied mothers graduated from a university but three quarter of them were a housewife and the majority of them were married.   This may be due to that even the mothers of children with congenital heart disease graduated from a university she still in need to be educated about congenital heart diseases because the mothers didn't have enough knowledge to improve their self-efficacy regarding caring of their children with congenital heart disease.

Similarly **El-Said D. et al., (2023)** clarified that about more than half of the studied mothers their age ranged from 30 to 40 years, but more than half of them continued their secondary or diploma education and more than two third were housewives. While **Sanayeh M. et al., (2021)** illustrated that mothers' age ranged from 25 to 35 years and the most of the studied mothers graduated from a college but the majority of them were a housewife, also **Elsayed M.et.al. (2020)** found that more than half of the studied mothers their age ranged from 25 to 35 and more than one third of them has preparatory education while the majority of them were a housewife and were married. In addition, **Hussien A.et al., (2018),** discovered that housewives made up the bulk of the sample under study.

In relation to the mothers total knowledge level about congenital heart diseases, this study illustrated that the most of the studied mothers have low knowledge level about congenital heart diseases before the educational instructions, while the majority of them have high educational knowledge level about congenital heart diseases after the implementation of the educational instructions. From the viewpoint of the researcher the educational instructions was

so effective and comprehensive, covered all the knowledge about congenital heart diseases and it was introduced to the mothers as a note book which make them find it easy to access the knowledge.

This study supported by **El-Said D. et al., (2023)** who illustrated that there were marked statistically significant improvements in mothers' total knowledge scores at posttest and follow-up phases when compared to pretest. Also **EL-Gendy et al., (2020)**, evident that the total mothers' knowledge and reported practices for their children with congenital heart disease care improved immediately post and after 3 months of the program. This study also supported by **Abdel-Salam.et al., (2018)** who verified that, in comparison to preprogram, there was a highly statistically significant difference in the mothers' knowledge score about congenital heart disease at post and after three months.

This finding was incongruent with **Elshazali et al., (2018)** claimed that although parents of children with congenital heart disease had a solid understanding of their child's condition prior to the intervention, it is still advantageous to take basic steps like increasing access to written information. Also the finding was disagreed with **Poudel & Malla (2017),** who stated that following the implementation of booklet education, over one-third of the mothers had inadequate knowledge and over half of the mothers had relatively adequate knowledge prior to the intervention.

The present study clarified that less than one third of the studied children with congenital heart disease had good quality of life pre educational instructions while all of them and more than three quarters had good quality of life immediately after and one month after

implementation of educational instruction respectively. The researcher's opinion that all studies that are based on educational instructions and follow-up especially for knowledge and practices result in improvement the general status of the children, which is reflected in improvement of overall pattern of their quality of life.

This result supported by **EL-Gendy et al., (2020)**,they reported that children diagnosed with congenital heart disease report notable changes in their quality of life in the physical, psychological, social, and educational domains immediate and three-month after completing the program, respectively. Also **Abdel-Salam et al., (2018)** as the current study indicates, it is clear that there was a highly statistically significant difference between the mothers' quality of life dimensions before, during, and after the three months the educational program was implemented. In contrary **Ladak et al., (2018)** found that following intervention, the majority of the examined sample experienced reduced health-related quality of life across all dimensions. This findings also contradicting with **Atmadja et al., (2017),** who found that the social, emotional, and academic function factors did not differ significantly. There were no appreciable variations in the physical, social, emotional, or educational domains among children ages 2 to 12.

The findings of the present study clarified that the most of the studied mothers had low self-efficacy level regarding their children with congenital heart disease before the educational instructions, and this percentage improved to the majority of the studied mothers had high self-efficacy level regarding their children with congenital heart disease, immediately after and one month

after implementation of educational instructions. This may be due to the educational instruction play a vital role in the improvement of the mother's self-efficacy and the instructions presented in easy and simple manner and the more the mothers understand it and that improve their self-efficacy regarding caring of their children with their children with CHD which reflected in a great effect on the child's level of quality of life.

These findings matches with **El-Said D.et al., (2023)** who clarified that there were marked improvements in the mothers' reported efficacy regarding their children with congenital heart disease throughout the study phases the pretest results showed that only small percent of the studied mothers and this percentage improved to involve the majority of the studied mothers at the post- and follow-up phases respectively. Also **Abdel-Salam et al., (2018)** validated the current outcome and said that, at post-program and three months following the start of the educational program, over three quarters of the mothers had high levels of self-efficacy, whereas less than three quarters of the mothers had poor levels at pre-program. In the same line **Ni, Z. et al., (2016)** discovered that, at one and three months following intervention, parents in the intervention group had considerably higher levels of caregiving knowledge, caring behaviors, and self-efficacy.

The present study showed that there were appositive correlation between total mothers knowledge and level of quality of life of their children with congenital heart diseases and maternal self-efficacy regarding caring of their children pre and immediate post and post one month of the implementation of the educational instructions. From the researcher

point of view that educating the mothers about all dimensions of congenital heart diseases make a great improvement in their self-efficacy regarding their children with congenital heart disease which in turn develop their children quality of life.

This matches with **El-Said D. et al., (2023)** who clarified that there was a statistically significant positive association between total knowledge of the studied mothers and total reported efficacy regarding their children with CHD, also **EL-Gendy et al., (2020)**, evident that there were a significant differences between reported efficacy score and quality of life score after three months of intervention. In the same line **Elsayed M. et al., (2020)** demonstrated that there were statistical significant with positive relation between the mothers total knowledge and their practice regarding the care of congenital heart diseases. These findings also in similar with **Abdel-Salam et al., (2018)** who revealed that, there is a positive correlation between total knowledge of studied mothers and quality of life and practice after educational program implementation.

Landolt, et al., (2016) agreed with the study and found that there were a statistically significant differences with positive correlation between knowledge of the parents of children with congenital heart disease and their practice regarding their children and the quality of life of their children with congenital heart diseases.

The present findings disagree with **Mohamed et al., (2022)** who illustrated that there was a non-statistically significant relationship tween the mother's knowledge and practices regarding their children with CHD.

Conclusion

Based on the findings of the present study, it can be concluded that educational instructions about congenital heart disease had positive effect in improving mothers' knowledge, self-efficacy and quality of life of their children with congenital heart diseases.

Recommendations Based on the present study and its findings, the following recommendations are suggested:

Recommendations

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

1- An educational program should be conduct in service training program for nurses periodically to be knowledgeable about congenital heart diseases, nursing care of these children and the warning signs.

Further study

2-   An educational program should be conduct about cardiopulmonary arrest to the mothers of children with congenital heart diseases and how to perform basic life support and cardiopulmonary resustation.

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