Stressors Facing Mothers having Children with Congenital Heart Diseases

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Abstract

Background *Congenital Heart Diseases (CHDs) are the most common congenital malformation in children. Mothers having children with congenital heart diseases are facing unique challenges and experience significant stressors., which are either physical, psychological or social.* ***Aim:*** *The study aimed to investigate the stressors facing mothers having children with CHD.* ***Setting:*** *The study was conducted at the cardiology clinics of Alexandria University Children's Hospitals (AUCH) at Smouha and at El-Shatby.* ***Sample:*** *A convenient sample of 150 mothers who had children with CHD constituted the sample.* ***Tool:*** *Stressors facing mothers having children with congenital heart disease structured interview schedule was the tool used to collect the data, and it consisted of two parts: characteristics of mothers and their children as well as medical data of children and stressors facing mothers which included physical, psychological, social, financial stressors and stressors associated with child treatment. Every mother was interviewed individually.* ***Results:*** *Physical stressors were the highest stressors facing the mothers (Mean percent 99.5%), followed by financial stressors (mean percent 86,1%), stressors associated with treatment (mean percent 83.2%), social stressors (mean percent 78.5%), and psychological stressors (mean percent 71.0%). Statistically significant differences were found between mothers' social stressors and their age, type of the family and children birth order. Also, there were significance differences between physical stressors and mothers' level of education, children's age and birth order.* ***Conclusion:*** *The highest stressors facing the mothers were the physical stressors while psychological stressors were the least stressors reported by the mothers.* ***Recommendations:*** *Pediatric nurses must have an active role in reducing the stressors of the mothers of children with CHD through guiding and supporting them from the time of diagnosis. Establishment of group psychotherapy for mothers having children with CHD to share other mothers' feelings, recommendations, and exchange experiences.*

Keywords:
Children, Congenital heart diseases, Mothers, Stressors.

Introduction

Congenital Heart Diseases (CHDs) are the most common congenital malformation in children which represent a major worldwide wellbeing issue. Some of these CHDs significantly shorten children's lifespan, while others may greatly alter their quality of life (Mahmoud et al., 2020).

Congenital Heart Diseases are structural problem which present at birth and occurs when the heart or blood vessels near the heart didn't develop normally before birth. This defect can disrupt the normal flow of the blood through the heart (Liu et al., 2019).

The causes of CHD are often unknown, but some neonates have heart defects because of the change of their genes or chromosomes and others due to combination of genes and risk factors. The risk factors are exposure of mothers to certain infections, medication and radiation during pregnancy (Hockenberry and Wilson, 2013).

In Egypt, Al-Fahham and Ali (2021) studied the pattern of congenital heart diseases among Egyptian children. They found that 79.2% of 1005 children had Acyanotic heart diseases and the most common Acyanotic and Cyanotic disease is VSD and Tetralogy of Fallot respectively.

Congenital Heart Diseases can be classified into two main groups, Cyanotic and Acyanotic Congenital Heart Diseases. Cyanotic Congenital Heart Diseases involve heart defect that reduce the amount of oxygen delivered to the rest of the body (Hockenberry and Wilson, 2015).

Mothers having children with congenital heart diseases are facing unique challenges and experience significant stressors. Stressors can be defined as an events or conditions that occur in a person's life that may adversely affect individuals or their family's health or wellbeing (Wool M, 2022). The stressors facing mothers can be physical such as: burden of caring of diseased child and frequent hospitalization. Psychological stressors as uncertainty about child future and fear of death. Social stressors as lack of support from family and social isolation from recreational activities (Zhang et al., 2023).

The stressors of parents of children with CHD across the child's lifespan will have an impact on overall family functioning and the child's home environment. Also, parental stress can affect the parents' own physical and mental health, overall well-being, and quality of life (Lisanti, 2018).

Pediatric nurses play a proactive role in providing care and support for CHD children and their mothers. They should equip the mothers with information about children's condition, treatment and prevention of complication. They have a role in implementing family centered care through encouraging mothers' participation in the care of their children which foster the parent -children relationship and reduce their anxiety and stressors (El-Gendy et al., 2020).

Aim of the study: The aim of the present study was to determine the stressors facing mothers having children with congenital heart disease.
Research Question: What are the stressors facing mothers having children with congenital heart disease?

Materials and Method

Study design: A descriptive research design was used to accomplish this study.
Setting: This study was conducted at the cardiology clinic of Alexandria University Children's Hospital (AUCH) at Smouha and cardiology clinic and inpatient departments at Alexandria University Children's Hospital at El-Shatby.
Subjects: A convenient sample of 150 mothers had children with CHD who fulfilled the following children's criteria comprised the study subjects: Age ranged from 6 months up to 6 years, free from other chronic illness as, diabetes and free from any neurological impairment as cerebral palsy or down syndrome. The study sample size was estimated based on EPI info program and the final sample size was 150 mothers
Tool: Stressors Facing Mothers having Children with Congenital Heart Disease Interview Schedule.
The tool was developed by the researcher after reviewing of recent and relevant literature to assess the stressors of mothers having children with CHD (Abdallah et al., 2022; Sayeh et al., 2023). It consisted of two parts as follow:
Part I: Characteristics of Mothers and their Children: It includes characteristics of mothers as age, level of education, occupation, number of children, income, type of family, and residence.
In addition to characteristics of children as age, gender, birth order, and joint a nursery/ school.
Part II: Stressors Facing Mothers: It included the

following:

Physical stressors as, burden of great effort in caring of their children and meet children's needs, interrupted sleep, and tired from transportation and follow up.

Psychological stressors as, stressors related to recurrent hospitalization, feelings of anger, guilt and helplessness feeling, and fear from child's sudden death.

Social stressors as, lack of social support, long separation from other family member due to repeated hospitalization, lack of recreational or social activities.

Stressors were assessed based on the statement is stressor or not and if stressor the mother report its frequency on Likert scale as always, sometimes and seldom.

Method

- Approval from the Research Ethics Committee of Faculty of Nursing, Alexandria University was obtained before conducting the study.
- Permission was obtained from the responsible authorities of the previously mentioned settings to conduct the study after explaining the aim of the study.
- Tool was developed by the researcher and was tested for content validity by five experts in the field of pediatric nursing. Reliability of the tool was ascertained using Cronbach Coefficient Alpha Test where r = 0.964.
- A pilot study was carried out on 15 mothers (10% of the sample) to test clarity and feasibility of tool. Necessary modifications were done. Those mothers were excluded from the studied subjects.
- Every mother was interviewed individually. And the duration of each interview lasted 15-20 minutes.
- After completion of data collection, the necessary statistical analysis was used.

Statistical Analysis of Data: Data were fed to the computer and analyzed using IBM SPSS software package version 20. Qualitative data were described using number and percent. The Kolmogorov-Smirnov test was used to verify the normality of distribution Quantitative data was described using mean and standard deviation. Significance of the obtained results was judged at the 5% level. The used tests for statistical analysis were Student t-test, F-test (ANOVA), Mann Whitney test and Kruskal Wallis test.

Ethical Considerations Written informed consent was obtained from every mother after explaining the aim of the study, her voluntary participation and the right to withdraw from the study at any time. Anonymity was considered and confidentiality of data was ascertained to each mother.

Results

Table (1) shows the characteristics of mothers. It was found that 47.3 % of mothers were in the age of 20 to less than 30 years with a mean age 28.68 ± 7.62 years. Also, 26% of mothers were either illiterate or able to read and write and 35.3% completed their basic education. Most of the mothers were housewives (92%). Slightly more than half of them were from rural areas and live in nuclear families (55.3% & 52% respectively).

Characteristics of children are illustrated in **Table (2)**, where slightly less than two thirds of the children were less than 1 year of age (62.7%), while 23.3% of them were in the age of 1 year to less than 3 years with a mean age of 17.50 ± 19.19 months. More than half of the children were males (58.7%) and 30% of them were the 1st child.

The mean scores of stressors facing mothers having children with CHD are presented in **Table (3).** Physical stressors were the most reported stressors by mothers as its mean was 149.2 with 99.5%, and social stressors with mean 117.7 and percentage 78.5%. Psychological stressors represented the least stressors where its mean was 106.5 with percentage 71.0%.

Physical stressors facing mothers having children with CHD were presented in **Table (4).** It is found from that all the mothers were burden from the great effort in caring of their children and meeting their children's needs (100% for each), which were always a stressor for 80% and 86.7% of mothers respectively. Interrupted sleep was a stressor for almost all mothers (99.3%), which was always stressor for 83.2% of them. Also, 98.7% of the mothers stated that they were exhausted from transportation to hospital for their children's illness or follow-up, which was always stressor for 50% of mothers.

Table (5) illustrates social stressors facing mothers having children with CHD. It was found that the highest social stressor perceived by mothers was overwhelming by other family roles (97.3%), followed by lack of recreational and

social activities and lack of social support which constituted 96.7% and 95.3 % of mothers respectively. These social stressors were reported as always stressors for 78.1%, 44.1% and 28.0% of mothers respectively. Furthermore, inability to reconcile between care of sick child and other family members was stressor for 89.3% of mothers and lack of social relations / visits due to child's recurrent hospitalization was stressor for 86% of mothers.

Psychological stressors facing mothers were presented in **Table (6)**. It was revealed that almost all the mothers stated that fear from child sudden death or disability, unpredictability of the child's future were stressors (99.3% of each), which were always stressors for mothers (98.7% of each). Child inability to play and deal with other children in order not to prevent any harm was stressors for 95.3% of mothers, where 47.5% of mothers reported it as always, a stressor. Also, worry about the children's suffering from any problem during feeding was a stressor for 94.7% of mothers which was reported as sometimes stressors by 43.0% of them. Ambiguity concerning diagnosis, treatment and operation as well as lack of clarity about children's care were stressors for 92.7% and 90.7% of mothers respectively, which were reported as sometimes stressors for 58.3% and 57.3% of mothers respectively. In addition, feeling of guilt and helplessness was stressor for 86.7% of mothers.

Table (7) shows the relationship between the total score of mothers' stressors and their characteristics and their children. There were statistically significant differences only between the total score of mothers' physical stressors and their characteristics in mothers' level of education where P values was 0.050, and their children's birth order where P value was 0.021. There were no statistically significant differences between mothers' social stressors and their characteristics except in their age and type of their family, where P values were 0.023 and 0.045 respectively. One the other hand, there was statistically significant differences between mothers' social stressors and children's characteristics except children's birth order, where P was 0.002.

Discussion

Congenital heart diseases are the most common types of birth defect. There are constructive anatomic dysfunctions of the heart or large blood vessels that exist at time of birth. The mothers of children with CHD are expected to be exposed to more diverse and specific experiences than mothers of normal children (Lee and Ahn, 2020).

Parents who have children with CHD experience profound stress from the time of diagnosis, through their children's hospitalization and years follow the diagnosis that affect their physical and mental health, wellbeing and quality of life (Abdallah et al., 2022). The present study findings revealed that the majority of mothers have high percent scores of all the various types of stressors **(Table 3)**. This can be interpreted in the light of the fact that CHD is a chronic disease and by the nature of its diagnosis, is stressor for mothers and has great impact on them and their children's lives and their daily living activates. Moreover, CHD usually need frequent follow-up and most of the time mothers have strong fear from the sudden or expected death of their children.

Physical stressors constitute the highest percent of stressors facing mothers who have children with CHD **(Table 4)**. This finding is supported by Ghimire (2017) who found that parents who have children with CHD have more physical stress than the other types of stress. This finding could be explained in the fact that about two thirds of the studied children were either infants_or toddlers **(Table 2),** where they are usually dependent on their mothers in meeting their daily needs as feeding, bathing…etc. Furthermore, the mothers may feel tired from the children`s frequent hospitalization and continuous monitoring of their condition. They be exhausted from feeding of their infants and toddlers because they are at great risk of aspiration **(Table 4)** (Norman, 2022). In addition, most of the children have regular follow-up and the distance of the follow-up places were far from mothers' homes which increases mothers feeling of tiredness that may be reflected on their expressed it as physical stressors.

It is revealed from the results of the present study that nearly all mothers reported their interrupted sleep as a stressor **(Table 3)**. This could be supported by the mothers' findings, where nearly all mothers were afraid from children's sudden death, their unpredictability about their children's future and feeling anxious and sad about their children's poor growth **(Table 6)**. This finding is congruent with Smith, et al, (2022) who stated that the majority of mothers in their study did not sleep well and describing their

sleep as terrible.

Social support is effective in reducing some of the psychological stressors of the family outcome (Lisanti, 2018). In the present study, it was found that the majority of mothers expressed their lack of social support was a stressor **(Table 5)**. This in line with Sabzarari, (2016) who found that feeling lonely in caring of children was experienced by the majority of the mothers in their study. On the contrary, Khoury, (2013) mentioned that there is a collaboration and participation of fathers in taking care of the sick children and provided support for mothers.

The majority of mothers in the present study among the stressors that faced the mothers was their inability to reconcile between the care of their sick children and the other family members. This is congruent with Sood et al., (2018), who found that mothers in their study had difficulty in balancing between the care of other children in the family. In addition, mothers' feeling of lack of recreational and social activity were among their social stressors. These findings could be justified by the overprotection of mothers to their children with CHD, and their fear from their children's sudden death, especially these children unusually have low immune system than normal children, so the mothers try to keep them away from any overcrowdings. Also, the burden of regular follow-up increases mothers' stress, where many of them are nuclear family and lack social support.

Mothers of children with CHD face a unique challenge and psychological burdens while their children go through physical and psychological difficulties during disease progression. This result may be explained by the fact that most of the mothers had stress from their unpredictability about the children future (Table 4). This finding is supported by the finding of Sabzevari et al., (2016), who stated that all mothers in their study reported they have stress from unknown future of the children**.**

Mothers' suffering from their children's feeding problem was among the stressors mothers face in the current study. This finding is congruent with Biber et al., (2019) who found in his study that all mothers reported that feeding process was the source of feeling distress. The finding in the present study may be due to the fact that, feeding and swallowing difficulty are common in infants with CHD and associated with significant morbidity and increase caregivers' stress as a result of difficulty in coordinating breathing and swallowing due to increase respiratory rate and effort of breathing, which lead to fatigue (Arvedson, 2020).

Nearly all mothers were afraid from their children's sudden death, upset from not allowing their children to play with other children. This might be due mothers believe that individuals with heart problems are usually exposed to sudden death. Thus, because of mothers' fear from the unexpected sudden death of their children, they restrict their children's activities.

Lack of clarity about how to care for their children was a stressor for most of the mothers in the present study **(Table 6)**. This may be related to their lack of information about such care from the medical staff especially about treatment, operation, and how to care for the children after operation. Moreover, they may have lack of communication with health care providers**.**

Feeling of guilt and helplessness were among the stressors reported by the mothers in the present study. This finding could be justified by mothers' feeling of their inability to balance between providing care of their sick children and the care of other family members and their inability to engage their sick children in recreational and social activities. Feeling of helplessness may be due to lack of their social support **(Table 5)**.

There was a significance difference between children`s age and mothers' physical stressors, where physical stressors were high among mothers who have children less than 1 year and children from 1-3 year. This can be interpreted in the light of the fact that infants and toddlers require more effort from their mothers in their care as they are fully dependent on their mothers in fulfilling their all-daily living activities. This was supported by Golfenshtein et al., (2017) who stated that parents of children with CHD in their study experience more intense stress than parents of healthy infants particularly when the children were less than one year of age. On the contrary, Lee et al (2007), found that mothers of the school-age children had higher level of parenting stress than mothers of infants, toddlers and preschoolers.

It is found in the present that there was significance difference between social stressors reported by mothers and the type of their family. The mean of social stressors of nuclear family

was higher than the mean of extended family (**Table. 4).** This may be related to mothers who live in extended family have support in caring of their CHD children and in the care of their siblings in addition to their chores.

Conclusion: Based on the finding of the current study it can be concluded that, mothers having children with CHD had confronted with multiple stressors. Physical stressors were the highest stressors perceived by the mothers followed by financial stressors, stressors associated with treatment, social stressors, and psychological stressors in that order. Statistically significant differences were found between mothers' social stressors and their age, type of the family and children birth order. Also, there were significance differences between physical stressors and mothers' level of education, children's age and birth order.

Recommendations:

- Pediatric nurses must have an active role in reducing the stressors of mothers of children with CHF through guiding and supporting them from the time of diagnosis.
- Establishment of psychotherapy support group for mothers having children with CHD.

Further studies: Study effect of training program for pediatric nurses in cardiology clinic on their guidance and support of mothers having children with CHD.

Limitations of the study: Data was collected during Covid 19 Pandemic, so duration of data collection increased, and new settings were added.

Authors contributions

Salwa El-Sayed Mohamed, Instructor: Played a significant role in data collection, analysis, and interpretation**,** research methodology, writing a literature review, preparation of results, study discussion, conclusion, recommendations and organizing references

Magda Mohamed E. Youssef, Emeritus Professor: Supervised all thesis stages such as writing thesis protocol, and development of tool. Helped in research methodology, interpretation of results, study discussion, conclusion, recommendation and organizing references.

Reham Mohamed Wagdy, Assistant Professor: Shared in all thesis stages and helped in data collection.

Noha Mohamed Arafa, Assistant Professor: Supervised all thesis stages, such as writing the research protocol, development of the tool, data collection, writing a literature review, discussion, tabulation, and analysis of collected data.

Table (1): Sociodemographic Characteristics of the mothers (n = 150)

Characteristics of the mothers	No. (n = 150)	%
Age\ years		
≥ 20	21	14.0
20 -	71	47.3
30 -	48	32.0
40 and more	10	6.7
Mean ± SD.	28.68 ± 7.62	
Level of education		
Illiterate\ Read &write	39	26.0
Basic education	53	35.3
Secondary school \ Institute	45	30.0
Collage \ Completed post-graduate	13	8.7
Occupation		
Worker	12	8.0
Housewife	138	92.0
Income		
Enough	16	10.7
Not enough	134	89.3
Residence		
Rural	83	55.3
Urban	67	44.7
Type of family		
Nuclear	78	52.0
Extended	72	48.0

Table (2): Sociodemographic Characteristics of Children (n =150)

Characteristics of the child	No. (n = 150)	%
Age \ years		
≥1 year	94	62.7
1-	31	20.7
3 – 5	25	16.7
Mean ± SD.	1.46 ± 1.60	
Gender		
Male	88	58.7
Female	62	41.3
Birth order		
1st child	45	30.0
2nd or 3rd child	60	40.0
4th child or more	45	30.1
Is the child going to school/ nursery?		
Yes	11	7.3
No	139	92.7

Table (3): Mean Score of Stressors Facing Mothers with CHD (n =150)

Total stressors	Mean ± SD.	%
– Physical stressors	149.2	99.5
– Social stressors	117.7	78.5

– Psychological stressors	106.5	71.0

Table (4): Physical Stressors Facing Mothers Having Children with CHD (n=150)

Physical Stressors	Stressful		Not stressful		Degree of stressors						Total	
					always		Sometimes		Seldom			
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
– Burden of great effort in caring of their children.	150	100.0	0	0.0	120	80.0	22	14.7	8	5.8	150	100%
– Burden of meeting children's needs.	150	100.0	0	0.0	130	86.7	18	12.0	2	1.3	150	100%
– Interrupted sleep.	149	99.3	1	0.7	124	83.2	18	12.1	7	4.7	149	100%
– Tired from transportation to hospital and for follow - up.	148	98.7	2	1.3	74	50.0	59	39.9	15	10.1	148	100%

Table (5): Social Stressors Facing Mothers Having Children with CHD (n=150)

Social Stressors	Stressful		Not stressful		Degree of stressors						Total	
					Always		Sometimes		Seldom			
	No.	%	No.	No.	%	No.	No.	%	No.	%	No.	%
– Overwhelming by other family roles.	146	97.3	4	2.7	114	78.1	27	18.5	5	3.4	146	100
– Lack of recreational and social activities.	145	96.7	5	3.3	64	44.1	65	44.8	16	11.0	145	100
– Lack of social support.	143	95.3	7	4.7	40	28.0	65	45.5	38	26.5	143	100
– Inability to reconcile between care of sick child and other family members.	134	89.3	16	11.9	47	35.1	66	49.2	21	15.7	134	100
– Lack of social relations / visits related to recurrent hospitalization	129	86.0	21	14.0	36	27.9	50	38.8	43	33.3	129	100
– Siblings' sadness due to their brother/ sister illness.	81	54.0	69	46.0	34	42.0	35	43.2	12	14.8	81	100
– Sibling jealousy from extra care provided to child.	46	30.7	104	69.3	10	21.8	18	39.1	18	39.1	46	100

Table (6): Psychological Stressors Facing Mothers having children with CHD (n=150)

Psychological Stressors	Stressful		Not stressful		Degree of stressors						Total	
					Always		Sometimes		Seldom			
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
– Fear from child's sudden death or disability.	149	99.3	1	0.7	147	98.7	2	1.3	0	0.0	149	100
– Unpredictability of child's future.	149	99.3	1	0.7	147	98.7	2	1.3	0	0.0	149	100
– Child's inability to play and deal with other children in order not to get harm.	143	95.3	7	4.7	68	47.5	60	42.0	15	10.5	143	100
– Worry about child's suffering from feeding problems.	142	94.7	8	5.3	34	23.9	61	43.0	47	33.1	142	100
– Feeling anxious and sad about child's poor growth & development.	139	92.7	11	7.3	70	50.4	37	26.6	32	23.0	139	100
– Ambiguity concerning diagnosis, treatment, and operation.	139	92.7	11	7.3	21	15.1	81	58.3	37	26.6	139	100
– Lack of clarity about how to care for the child.	136	90.7	14	9.3	25	18.4	78	57.3	33	24.3	136	100
– Feeling of guilt and helplessness	130	86.7	20	13.3	89	68.5	32	24.6	9	6.9	130	100
– Child recurrent hospitalization and fear of separation.	107	71.3	43	28.7	17	15.9	35	32.7	55	51.4	107	100
– Tense relation with husband due to over whelming with child.	24	16.0	126	84.0	3	12.5	7	29.2	14	58.3	24	100
– Conflict between child's inconsistent follow-up time and mothers' working hours.	10	6.7	140	93.3	8	80.0	2	20.0	0	0.0	10	100

Tables (7): Relationship between Characteristics of Mothers and their Children and Mothers' Physical, Social and Psychological Stressors (n =150)

Characteristics	Stressors			
	No	Physical Mean± S. D	Psychological Mean ± S. D	Social Mean ± S. D
A. Mother's characteristic				
Age\ years				
< 20	**21**	15.10 ± 1.45	32.48 ± 4.24	19.62 ± 4.17
20 –	**71**	14.79 ± 1.59	31.41 ± 4.07	18.60 ± 3.64
30 –	**48**	14.44 ± 1.91	31.50 ± 4.10	20.66 ± 3.12
40 & more	**10**	15.00 ± 1.89	32.50 ± 4.38	19.70 ± 2.63
		H = 3.893	H = 1.153	**F = 3.267**
		P 0.273	P 0.764	**P 0.023***
Education				
Illiterate\ Read and Write	**39**	14.46 ± 1.92	31.59 ± 3.56	19.90 ± 3.58
Basic Education	**53**	15.17 ± 1.31	32.85 ± 3.88	2013 ± 3.43
Secondary school\ Institute	**45**	14.60 ± 1.88	30.60 ± 4.01	18.52 ± 3.78
Collage\ completed post-graduate	**13**	14.23 ± 1.59	30.69 ± 5.76	18.67 ± 3.03
		H= 7.808	H = 7.517	F = 2.054
		P 0.050*	P 0.057	P 0.109
Residence				
Urban	**67**	14.85 ± 1.46	31.70 ± 4.10	19.72 ± 3.49
Rural	**83**	14.64 ± 1.88	31.63 ± 4.13	19.28 ± 3.70
		U = 2714.50	U = 2762.50	t = 0.750
		P 0.791	P 0.946	p 0.455
Type of Family				
Nuclear	**78**	14.68 ± 1.64	31.71 ± 4.02	20.04± 3.70
Extended	**72**	14.79 ± 1.78	31.61 ± 4.22	18.86 ± 3.38
		U = 2613.0	U = 2747.0	t = 2.020
		P 0.437	P 0.818	p 0.9
B. Child Characteristics				
Gender				
Male	**88**	14.81 ±1.69	31.64 ±3.94	19.46±3.68
Female	**62**	14.63 ±1.73	31.69 ± 4.36	19.49± 3.48
		U =2595.0	U =2726.5	t = 0.053
		P 0.590	P 0.995	P 0.958
Birth order				
1st child	**45**	14.81 ±1.69	31.18 ±5.03	17.93±3.66
2nd child or 3rd child	**60**	14.63 ±1.87	31.42±3.56	20.00±3.45
4th child or more	**45**	15.22±1.33	32.47±3.70	20.29± 3.29
		H = 7.763	H = 2.487	**F = 6.285**
		P 0.021*	P 0.288	**P 0.002***

t: Student t-test F: One way ANOVA test H: Kruskal Wallis test
U: Mann Whitney test *: Statistically significant at p ≤ 0.05

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