

Research Article

Magnitude of Stress among Parents of Children with Cardiac Malformation in Tertiary Care Hospitals Peshawar

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Background: Congenital Heart Defects (CHDs) are inborn anomalies or mal-formations of heart. These are the most common type of birth anomalies, approximately 1-2% babies are delivered with cardiac anomalies all over the world. CHDs are some of these deformities that disturb the lives of effected child as well as parents of the effected child. Studies from Pakistan have only reported incidence and risk factors of CHDs and have not identified their association with parental stress.

Aim: The aim of this study was to identify the magnitude of parental stress caused by child diseased status.

Methodology: This was a descriptive cross-sectional study. 387 participants was the sample size, calculated through online software open-epi. Every parent fulfilling the inclusion criteria was selected through Consecutive Sampling technique. And, data was collected through an adopted questionnaire.

Results: Majorities (60.2%) of the study participants were male. The mean overall score of stress was 64.36 with a Standard Deviation of ± 6.24534 . A strong association was identified in the category of gender, females were more in stress than the male (Chi-square = 42.66, $P < 0.001$).

Conclusion: The outcomes of the current study show that parents of the CHD diagnosed kids were in stress. There was a major role of demographical variable in the level of outcome variable "stress" among parents of CHD diagnosed children, such as gender, age, income, occupation, and education level.

Keywords: Parental stress; Congenital heart defects; Inborn anomalies; Cardiac anomalies; Mental health; Parental mental health

Background

Congenital Heart Defects are inborn anomalies or malformations of heart [1]. These are the most common birth anomalies, approximately 1-2% babies are delivered with cardiac anomalies all over the world [2]. CHDs are some of deformities that disturb the lives of affected child as well as parents of the affected child. More than 1 million children are living with CHDs [3] and 48% die within one year of age all over the world [4]. Incidence rate of CHD is 6/1000 in developing countries [5] and nearly 60% of children with CHD need special health care. About 95% with mild malformation of heart survive till adolescent and 75% with complicated heart defects survive till one year of age. Due to advance technology, lifespan of 90% CHD children reached to adulthood, but the vulnerability still under consideration [6]. Moreover, in Pakistan incidence rate is 15/1000 [7].

CHD children may develop psychosocial, cognitive and behavioral problems [8]. These children need special attention of parents while their parents report high level of stress, anxiety, post-traumatic stress disorders and depressions [4-8] that may relate to uncertainty about children life expectancy and unpredictable medical situation [8-10].

Literature has highlighted the issue an important to be addressed, as it can drastically affect the economy of our country. Moreover, literature has also identified that it produces psychosocial problems for parents [11]. Studies from Pakistan have only reported incidence of CHD and its risk factors, [12,13] and have not focused on its association with parental stress and coping mechanism. The aim of this study was to generate knowledge regarding parental stress and to boost up health care delivery system to the efficient level for health care workers to manage CHD patients as well as their parents in a better way.

Methodology

This was a descriptive cross-sectional study; the design was used according to the need of the current study question. Researcher wanted to identify the magnitude of stress among parents of CHD children. The current study was conducted in the Cardiac Surgery Unit of Lady Reading Hospital (LRH) Peshawar, and Cardiac Unit of Hayatabad Medical Complex (HMC). 387 participants as sample size was calculated through online software open-epi with expected frequency 50%, Margin of Error=05%, and C I=95%. Every parent fulfilling the inclusion criteria was selected

through Consecutive Sampling technique. Inclusion and exclusion criteria were based on the status of parentage, time of diagnoses of patient as CHD. The exclusion criteria were based on the parental status, co-morbidity status of the CHD patient.

- All parents of children who had been diagnosed as CHD at least 3 months ago were included in the study.
- While, all parents of 3 months ago diagnosed CHD were excluded who have also been diagnosed with co-morbidity, similarly parents of the adopted CHD diagnosed children were also excluded from the study.
- Moreover, unwilling parents of 3 months ago diagnosed children were also excluded.

Approval was obtained from the Graduate Committee (GC) of Institute of Nursing Sciences (INS), Khyber Medical University (KMU) and Advanced Studies and Review Board (ASRB), and Ethics Committee of KMU before data collection. Moreover, Approval was also granted by all Organization/Units Heads where data were collected. Furthermore, consent was obtained from each participant and autonomy of the participants were in their well regarding withdraw from study at any stage and time. Confidentiality of the patient and parents was maintained.

Stress level of the parents was measured on parental stress scale “Urdu translated tool” A short form of scale that was developed by Jones and Berry in 1995 [14]. This scale includes 18 items of self-reporting, these items have two aspects; “constructive (e.g. psychological benefits, own individual improvement) and unconstructive (difficulty on assets, limitations) themes of parenthood”. .83 is internal reliability of the scale, and .81 is test-retest reliability [14]. Responses were obtained through 5 – Point scale for all items; (1=5) means strongly disagree, (2=4) disagree, (3=3) undecided, agree mean (4=2), and (5=1) strongly agree. The higher score shows high stress level.

Another part of the questionnaire consists of question related to demographic data; Age, gender, occupation, income, education etc. These questionnaires were translated into Urdu and were administered to literate parents, while questions were asked from illiterate parents to fill the questionnaire.

Version 22 of SPSS software was used for data analysis. For descriptive statistics percentages and frequencies were calculated for categorical variables, Standard Deviation (SD) and mean were computed for continuous variables. Moreover, T-Test (Independent sample) was run on continuous variable (inferential statistics), whereas chi-square test was also applied on categories variables.

Results

Analysis of the Variables “Socio-Demographic”

Analysis of the results showed that majorities (60.2%) of the study participants were male and around 39.8% of them were females as shown in (Figure 1). It was found that significantly a majority (39%) of the participants were illiterate. While, a minor portion 9% of the participants were found with graduation or post-graduation. It was found that significantly a majority (31%) of the participants were housewives, followed by businessmen (24%). Analysis of the children

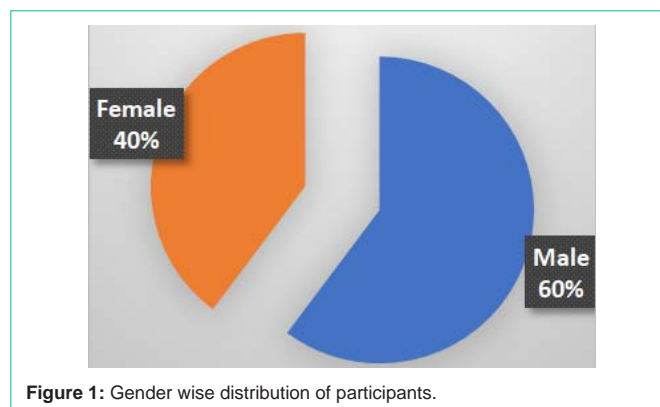


Figure 1: Gender wise distribution of participants.

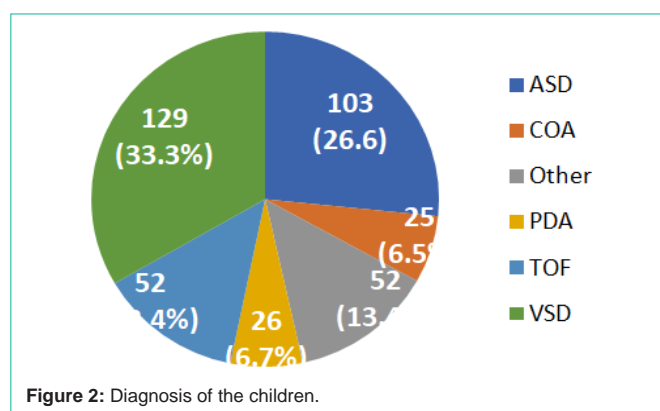


Figure 2: Diagnosis of the children.

showed about half of them (52.5%) were males, while (47.5%) were females. Analysis revealed that significantly a majority (33%) of the children were VSD diagnosed patients, followed by ASD (26.6%). The distribution is shown in (Figure 2).

The mean age of the participants was 32.11 years with SD of ±6.58 years (32.11±6.58 years). The mean children age was 14.85 months with a SD of 10.18 months (14.85±10.18 months). The average family members were 7 members with the standard deviation of 2 members (7± 2 family members). The mean income of the family per month was 22 thousand rupees, with the standard deviation of 8900 (22000± 8900 Rupees).

Mean Score of Parental Stress

The mean overall score of stress was 64.36 with a Standard Deviation of ±6.24534. A strong association was identified in the category of gender, females were more in stress than the males (Chi-square = 42.66, P < 0.001). Likewise, a considerable association was identified in the level of qualification and stress (Chi-square = 28.35, P < 0.001). Monthly income and stress were identified statistically associated too (Chi-square = 12.86, P < 0.001). Moreover, age and stress were tested and were identified strongly associated (Chi-square = 8.37, P < 0.001). Similarly, occupation and stress were identified having close association (Chi-square = 10.4, P < 0.001).

A significant variation in mean of the dependent variables of multiple categories across the educational level of parents (F = 4.661 and P < 0.001) shown in Table-(10). Tukey-HSD’s result revealed the mean outcome of Illiterates was identified diverse from Primary and Master, (P = 0.032 and 0.017) respectively. The mean outcome

Table 1: Stress Level among Parents of Children with CHD.

S.No	Statement	1= Strongly disagree	2 = Disagree	3 = Undecided	4 = Agree	5 = Strongly agree
1	Parents are pleased in their job as parents	284 (73.4%)	103 (26.6%)	0 (0%)	0 (0%)	0 (0%)
2	There is small or zero parents wouldn't do for their kid if it was essential.	155 (40.1%)	103 (26.6%)	0 (0%)	0 (0%)	129 (33.3)
3	Caring for my child (ren) sometimes takes more time and energy than I have to give.	0 (0%)	0 (0%)	0 (0%)	181 (46.8%)	206 (53.2%)
4	Parents sometimes are anxious whether they are acting sufficient for their child.	0 (0%)	52 (33.4%)	0 (0%)	257 (66.4%)	78 (20.2%)
5	Parents sense near to their child.	79 (20.41%)	103 (26.6%)	0 (0%)	154 (39.8%)	52 (13.4%)
6	Parents get pleasure from movement with their child (ren).	335 (86.6%)	52 (13.4)	0 (0%)	0 (0%)	0 (0%)
7	Child was a significant resource of love for parents.	150 (38.76%)	154 (39.80%)	4 (1.03%)	39 (10.08%)	40 (10.33%)
8	Having such kids provides parents a positive and hopeful sight for coming.	103 (26.6%)	103 (26.6%)	181 (46.8%)	0 (0%)	0 (0%)
9	The main basis of pressure in parents' living is their child.	104 (26.9%)	103 (26.6%)	0 (0%)	0 (0%)	180 (46.5%)
10	Such kids spare slight moment in time and elasticity in parents' life	52 (13.4%)	51 (13.2%)	52 (13.4%)	232 (59.9%)	0 (0%)
11	Such child was a economical load. For parents	0 (0%)	156 (40.3%)	0 (0%)	129 (33.3%)	102 (26.4%)
12	It is hard to balance different responsibilities because of my child.	52 (13.4%)	0 (0%)	0 (0%)	233 (60.2%)	102 (26.4%)
13	The performance of child is mostly embarrassing or stressful for parents.	51 (13.2%)	156 (40.3%)	180 (46.5%)	0 (0%)	0 (0%)
14	If I had it to do over again, I might settle on not to born a baby again.	284 (73.4%)	52 (13.4%)	51 (13.2%)	0 (0%)	0 (0%)
15	I sense overwhelmed due to the task of being a parent.	52 (13.4%)	104 (26.9%)	129 (33.3%)	102 (26.4%)	0 (0%)
16	Having such kids means very little options and slight control over lives.	52 (13.4%)	181 (46.8%)	52 (13.4%)	102 (26.4%)	0 (0%)
17	Such parents are content as parent	50 (12.92%)	77 (19.9%)	50 (12.92%)	110 (28.42%)	100 (25.84%)
18	Such parents see their child pleasurable	52 (13.4%)	104 (26.9%)	51, (13.2%)	26 (6.7%)	154 (39.8%)

of Master level was found to be different from the mean outcome of Primary, Middle, and High school of parent's stress ($P < 0.001$, $P < 0.013$, and $P = 005$) respectively, whereas, the difference between the mean outcome of Graduates and more categories was not statistically significant.

The outcome indicated statistically significant variation in mean of dependent variable among the groups of parental occupation ($F = 17.59$ and $P < 0.001$). The mean outcome of Jobless was identified statistically significant to Businessmen, government servant, house wife, and private school teacher respectively, ($P < 0.001$, $P = 0.002$, $P = 0.002$, and $P < 0.001$). The mean outcome of Laborer was found to be statistically significant from the mean outcome of Businessmen, Government servants, House wives, and private school teachers, ($P < 0.001$, $P = 0.003$, $P = 0.042$, and $P < 0.001$) respectively. Mean stress of the businessmen was found to be statistically significant from the mean stress score of Jobless, laborer, and house wife ($P < 0.001$, $P < 0.001$) respectively.

The outcome shows that age of the participants and stress level of the participants had negative weak correlation, ($r = -0.265$), the co-efficient of determination ($r^2 = 0.07225$) was calculated, the age only contributes 7% in this variation. Inversely, per month income of the family and stress level of the participants had weak positive correlation ($r = 0.222$) the co-efficient of determination was ($r^2 = 0.049284$), it donates about 5% in the difference of the variable's outcome.

Summary of the Results

The analysis of overall outcomes and results show that overall mean score of stress was 64.36 with a SD of ± 6.24534 . Mean difference

was found across different categories of demographical variables, moreover, age of the participants and stress level of the participants had week negative correlation. Inversely, per month income of the family and stress level of the participants were positively correlated. Result of the Chi square test found that females were more in stress than the male (Chi-square = 42.66, $P < 0.001$). Furthermore, significant association was found in education level and stress (Chi-square = 28.35, $P < 0.001$). Statistically significant association (Chi-square = 12.86, $P < 0.001$) was also found between monthly income and stress. Similarly, age and stress were compared and were found a strong association in them (Chi-square = 8.37, $P < 0.001$). Likewise, occupation and stress were also with a statistically significant association in them (Chi-square = 10.4, $P < 0.001$).

Discussion

The result of the current study identified that 46.51% of the participants were found to be in stress. Almost similar result was revealed by a study conducted by Kaugars et al. in USA, for the same purpose; 43% of participants "parents" were in clinically significant stress [8]. Similarly, the result of a systematic review of thirty "30" studies was also found to favor the current study's result; study has identified that 30% to 80% of the parents had mentioned mental distress [15].

The study has confirmed that mostly demographic variables were associated with the stress level. The results of the current research indicated that a week negative correlation of the age and stress level, ($r = -0.265$). These findings are supported by study's results, revealed that younger parents had a high level of stress than older parents' stress, (-0.18) [16]. It means that with increasing age, stress level

decreases.

The categories of the outcome variable “stress” were made on the base of median, and Chi Square test was applied, strong association was found across the gender, and females were found more in stress, (Chi-square = 42.66, $P < 0.001$). Likewise, a study conducted to identify stress among parents while caring their children with diseased status, identified that females “mother” with higher stress level than males “father” [17].

The outcome indicated that there was variation in the average stress score among the multiple groups of the parental qualification ($F = 4.661$ and $P < 0.001$). This variation is statistically significant. Illiterate had mean score of 64.8477 while master degree holder had a mean score of 70.5385. In the contrast a study conducted in Italy identified that higher education of the mothers had lower stress level [18].

All (100%) of the parents were agreed that caring their children requires much time and energy. That’s why they do not enjoy spending time with their children. Moreover, 86.6% of the parents were worried, either they did enough for their children or not, because they could not manage multi task at a time. That was the reason that only about 21% of the parents feel their kids a major resource of love for them, that may be the reason that 55.2% of the parents were not optimistic for the future, that’s why 46.5% of the parents considered their children as the chief resource of their stress, because 59.9% of the parents had a view that their children leave very little time for them. A study by Gona et al., conducted in the different region of Kenya, revealed that parents perceived such children a source of financial burden, moreover they felt that caring their diseased children was also a great problem for them [19].

Conclusion

The outcomes of the current study show that parents of the CHD diagnosed kids were in stress. There was a major role of demographical variable in the level of outcome variable “stress” among parents of CHD diagnosed children, such as gender, age, income, occupation, education level etc. Females were with a high level of stress than males.

Ethical Statement

Approval was obtained from the Graduate Committee (GC) of Institute of Nursing Sciences (INS), Khyber Medical University (KMU) and Advanced Studies and Review Board (ASRB), and Ethics Committee of KMU before data collection. Moreover, Approval was also granted by all Organization/Units Heads where data were collected. Furthermore, consent was obtained from each participant and autonomy of the participants were in their well regarding withdraw from study at any stage and time. Confidentiality of the patient and parents was maintained.

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