

Research Paper**Quality of Life beyond Cardiac Surgery in Adolescent**

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Phone: 7879493657, Email: [akhilendraparihar007@gmail.com](mailto:akhilendraparihar007@gmail.com)**Abstract****Objective:** *To Measure quality of life in adolescents after cardiac surgery***Design:** *Prospective analytical cohort study***Setting:** *Pediatric cardiology clinic of department of paediatrics of a tertiary level hospital***Participants:** *Study was carried out on 25 adolescents who were operated for different cardiac diseases at least 6 month before the time of study.***Main Outcome Measure(s):** *Quality of life of each individual was measured by using Pediatric Quality Of Life Inventory™ 3.0 Cardiac Module.***Results:** *As far as cardiac symptoms concerned mean quality of life score was 75.71 this suggest that all patients have improvement in their cardiac symptoms. As far as treatment compliance concerned mean quality of life score was 95.4 which represents that most of the patients were compliant to their treatment. Adolescents were very much concerned about their physical appearance this is reflected in the mean score of 85 in the field of perceived physical appearance concern about their physical appearance was more in early and mid-adolescent but acceptance was developed in late adolescent group. In respect to treatment anxiety mean quality of life score was 93.5 this signifies that patient did not have any anxiety when they are taken to health facilities. Almost 1/10<sup>th</sup> of children had cognitive problem this cognitive problem increased with increase in age with lowest score in late adolescence. Children had low scores in the domain of communication with medical staff which is low in the late adolescent.***Conclusions** *Overall improved quality of life was observed in all children after heart surgery in all scales. But due to decreased score in the field of perceived physical appearance, cognitive difficulty and difficulty to communicate in the late adolescent these domains needs further evaluation.***Keywords:** *Quality of life, Pediatric cardiac surgery, Adolescent, Pediatric Quality Of Life Inventory™ 3.0 Cardiac Module, QoL.***Introduction**

Quality of life, rather than being a description of the patient's health status, is a reflection of the

way that patients perceive and react to their health status and to other, nonmedical aspects of their lives<sup>(1)</sup>. Quality of the life can be assessed ideally directly by the patient, or if it is not possible

(young children, physically handicapped), by someone close to the patient, such as a family member, and finally by a health care provider. With increasing popularity and number of cardiac surgeries in children the survival has improved tremendously. Now we need to focus on assessing and improving the quality of life of such children as they have full productive life in front of them.

The various dimensions of the HRQOL on patients with heart disease might be assessed using generic or specific questionnaires. The Pediatric Quality of Life Inventory™ 3.0 Cardiac Module is a specific toll that can be easily and quickly applied to measure HRQOL in children and adolescents with heart disease. It is validated for use in clinical practice, where it facilitates the identification of risk, health status, and the results of treatment in paediatric populations with heart disease. The assessment of quality of life in chronically ill children and adolescents has become increasingly important as the mortality rates associated with various chronic diseases have decreased and survival rates increased.

Although medical intervention often results in the improved health status of Pediatric patients, there is evidence to suggest that frequent hospitalizations intrusive medical procedures, and uncertainty of survival, negatively impact childhood development and adjustment<sup>(2)</sup>. According to an analysis of Pediatric Quality of Life Inventory™ children as young as 5 year old can reliably and validly self- report their HRQoL with an age appropriate instrument<sup>(3)</sup>.

### Methodology

This is a prospective analytical study conducted in Pediatric cardiology clinic of Department of Paediatrics, of a tertiary level hospital over a period of 10 months from December 2015 to September 2016. 110 post cardiac surgery patients were identified from which 70 patient were contacted 17 patients were found dead post operatively out of 43 patients remained 25 were in adolescent age group of both sexes who had undergone surgery for heart disease at least 6

months back. A structured Proforma and questionnaire were filled for every child enrolled in the study. The parents and children of study group were informed about the purpose of research and that by filling out the questionnaire they were giving their consent to take part in the research.

Pediatric Quality of Life Inventory™ 3.0 Cardiac Module was used as questionnaire to measure quality of life. The PedsQL 3.0 Cardiac Module is composed of parallel child self-report and parent proxy report formats. We used child self- reports formats for all the children. The 27-item PedsQL 3.0 Cardiac Module encompasses Heart Problems (7 items), Treatment (5 items), Perceived physical appearance (3 items), and Treatment anxiety (4 items), Cognitive problems (5 items), communication (3 items) scales.

5 points Likert scale is used for the child self-report (0, never a problem; 1, almost a problem; 2, sometimes a problem; 3, often a problem; 4, almost always a problem). Items are reverse-scored and linearly transformed to a scale from 0 to 100 points such that higher scores indicate better HRQOL.

### Statistical Analysis

Data were tabulated using Microsoft office — Excel sheet and analysed using the ANOVA. Frequencies and percentages were calculated for all the categorical variables. P-value < 0.05 considered as significant.

### Result

Out of 25 patients studied, 56% were early adolescents. The mean age was  $13.48 \pm 2.49$  years and the median age was 13 years (table-1). Males (n=13) were more than females (n=12). The mean quality of life score obtained in our study total QoL score of 86.81 was obtained this signifies that quality of life is improved in patients after cardiac surgery. The mean QoL scores with respect to other problem groups in our study in different ages are as follows:

In terms of cardiac symptoms concerned mean quality of life score was 75.71(table-2) this

suggest that all patients have improvement in their cardiac symptoms. As far as treatment compliance is concerned mean quality of life score was 95.4 (table-2) which represents that most of the patients were compliant to their treatment. Adolescents were very much concerned about their physical appearance this is reflected in the mean score of 85 (table-2) in the field of perceived physical appearance. This perception was more apparent in early and mid-adolescent but later on acceptance developed in late adolescent group. In respect to treatment anxiety mean quality of life score was 93.5 (table-2) this signifies that patient did not have any anxiety when they are taken to health facilities. Almost 1/10<sup>th</sup> of children had cognitive

problems. These cognitive problems increased with increasing age with lowest score in late adolescence. Children had low scores in the domain of communication with medical staff which is lowest in the late adolescent.

In our study we found that after cardiac surgery at the time of assessment maximum adolescent has normal nutritional status (52%) while 16% adolescent were severely undernourished (table-3).

In this study most of the patient were operated for Rheumatic heart diseases (40%) followed by atrial septal defect (table-4).

**Table- 1:** Distribution of patients with respect to age (years)& Sex

Age Group	Female		Male		Total	
	Number	Percentage	Number	Percentage	Frequency	Percent
Early Adolescent (10-13yrs)	7	28%	7	28%	14	56%
Mid Adolescent (14-16yrs)	3	12%	4	16%	07	28%
Late Adolescent (17-19yrs)	2	8%	2	8%	4	16%
Total	12	48%	13	52%	25	100 %

**Table 2:** Comparison of Quality of life score among various Age groups (Quantitative)

Parameter	Early Adolescent		Mid Adolescent		Late Adolescent		Total	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Cardiac symptoms	71.78	30.37	76.78	28.37	80.36	32.17	75.71	30.01
Treatment compliance	94	16.41	98.33	9.13	95	15.39	95.4	14.33
Perceived physical appearance	76.67	35.92	84.72	31.08	95.83	14.43	85	29.64
Treatment anxiety	90.62	23.81	97.91	10.21	90.63	17.97	93.5	17.98
Cognitive problems	93	18.24	90.83	21.26	81.25	26.75	89.6	20.6
Communication	92.5	19.86	83.33	24.25	72.92	24.91	86.67	22.26
Total	86.24	25.28	88.62	23.13	85.65	24.93	86.81	24.63

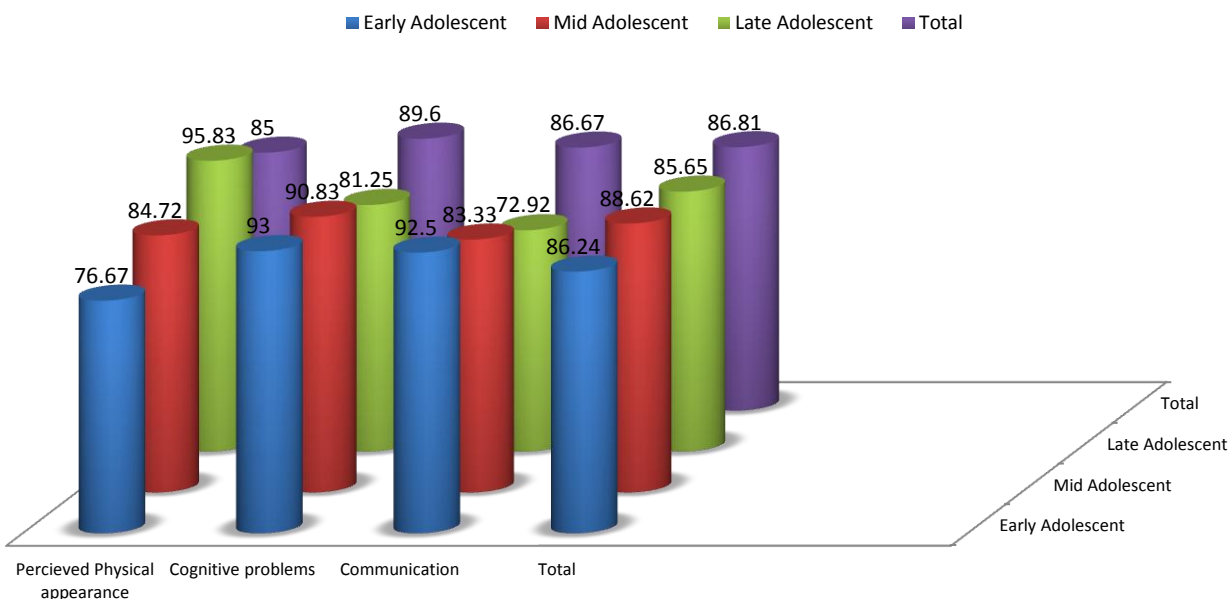
**Table- 3:** Distribution of nutritional status with respect to BMI

Group	Frequency	Percent
Normal nutrition	13	52%
Moderate undernutrition	8	32%
Severe undernutrition	4	16%
Total	25	100%

**Table- 4:** Distribution of patients with respect to diagnosis

Diagnosis	Disease Group	Frequency	Percent
RHD	Acquired heart disease	10	40%
ASD	Acynotic Congenital heart disease	6	24%
VSD		4	16%
BAV/AS		2	8%
TOF	Cynotic Congenital heart disease	3	12%
Total		25	100.0

## Comparison of Quality of life score among various Age groups (Quantitative)



### Discussion

With respect to individual diagnosis we got maximum number (n=10, 40%) of patients of Rheumatic heart disease followed by ASD (n=6), VSD (n=4) and TOF (n=3) (Table-4). This shows RHD is prevalent in our Rewa region. But with respect to disease group the maximum number (n=12, 48%) of patients belongs to Acyanotic CHD in our study (Table-4) which is also comparable to study of Elnur Tahirovi et al<sup>(5)</sup> where max patients (56.1%) belonged to CHD with left to right shunt.

In our study overall improved quality of life was observed in all children after heart surgery with mean QoL score >75 in all scales. This result is comparable to result obtained by Tahirovi et al<sup>(5)</sup> using PedsQL generic core scale, where same results were obtained in all scales.

The mean quality of life score obtained in our study with respect to cardiac symptoms in adolescents is 75.71 (Table-3). If we compare this with mean QoL score obtained on Physical health scale in study by Tahirovi et al<sup>(5)</sup> where they obtained 88.4% score in mean quality of life in respect to cardiac symptoms. It shows that further improvement is required to alleviate cardiac symptoms in our setups.

Tahirovi et al<sup>(5)</sup> also found low mean QoL score in school functioning (61.7) in teens we also found low score in cognitive function (81.25) in our study.

We obtained an overall score of 85 in the domain of perceived physical appearance this was lowest in early adolescent these results were comparable to the findings of Nascimento et al<sup>(6)</sup> in their study on QoL in children with rheumatic heart disease found that patient with RHD have low QoL with respect to perceived physical appearance even before surgery with mean QoL score 65.

### Conclusion

Overall improved quality of life was observed in all children after heart surgery with mean QoL score >75 in all scales. There was no statistically significant difference noted in QoL among different age groups (p-value>0.05). Statistically significant low QoL was observed with respect to perceived physical appearance in children who were operated for Rheumatic heart diseases (p-value<0.05). Maximum children (52%) had normal nutritional status at the time of study. Late adolescence shows improvement in terms of accepting their physical appearance compared to early and mid-adolescents. Late adolescence shows increased cognitive problems and increased

difficulty in communication as well as adolescent of all age group had cardiac symptoms these points need further evaluation.

It further demands that post cardiac surgery follow-ups and counselling in regards to all these concerns should be planned and implemented in all centres across the country.

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