

ORIGINAL ARTICLE

Quality of Life of Children with Cochlear Implant: A Parental Perspective

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ABSTRACT

Background: Cochlear implant for hearing implant children can have a variety of impact factors on the biographies of participants as well as their families.**Objective:** To find the improvement in hearing impaired children after cochlear implantation.**Study Design:** Descriptive observational study**Place and Duration of Study:** Audiology Center, Dr. Nadeem Mukhtar's Clinic, Lahore from 1st July 2015 to 31st December 2015.**Methodology:** Forty seven children aged between 2 to 5 years at the time of implantation and the current age is 4 to 16 years. The parental stance was evaluated using a self-designed questionnaire which was delivered to families and had the subsequent sections: communication, independence, happiness and well-being in social interactions, education, the implantation procedure, the benefits of the implant, helping the child, and the pre- and post-surgical care offered by the center for implant.**Results:** There were 26 (55.3%) females and 21 (44.7%) males. Parents were mostly pleased with improved interactions, self-reliance, social relation, wellbeing, happiness and education with the help of hearing. Auditory information is necessary for parents who are deciding for implant to increase the safety of their child, rehabilitation in the hearing world, as well as vastly better employment opportunities as adults.**Conclusion:** According to the parents, cochlear implants have various effects on their children that cannot be represented in a single scale. Along with overcoming hurdles in speech and language development, parents observed huge enhancement in communication skills, social interactions, and their child's self-assurance**Keywords:** Hearing loss, Hearing impairment, Cochlear Implant, Implant effectiveness

INTRODUCTION

Cochlear implant is the result of rigorous research over the last four decades. However, there is a long history of hearing by the electrical stimulation of the acoustic system. The centuries old concentration in the biology application of electricity was the source for the development of cochlear implant. Usage of electrical impulse instead of auditory impulse in triggering of auditory system of an individual with deep sensorineural hearing loss is an old practice however the idea of commercial cochlear implant came into existence in 1980s.¹

Hearing loss is an impairment of hearing and the term deafness is used when there is little and no hearing at all. And its severities may vary from mild to profound hearing loss. It can have an impact on language progress in the children and cause complications at work for adults. Hearing impairment has an enormous influence on both the affected individual and his family. This has an effect on all aspects of life, including cognitive, psychological, communication, educational, and personal evolution, as well as the family's financial situation.²

The majority of spoken language sounds are now attainable to children with intense to deep auditory loss because of recent innovations in listening technology, such as cochlear implants. The majority of newborns who are deaf or limited listening abilities may understand to hear their own voices, other people's voices, and the sounds of everyday life.³

The hearing and communication capabilities of patients with intense to deep sensorineural auditory loss who didn't get any benefit from hearing aids can be improved by surgically implanting a device in cochlea known as Cochlear Implant. A recognized cause of sensorineural hearing loss is cochlear dysfunction due to nonexistence of hair cells. Cochlear implant differs from hearing aid in a way that it directly encourages the auditory nerve renouncing the harmed part of ear.⁴

A person's physical condition, social functioning, and mental health are all vital aspects of their quality life due to cochlear implantation, communication, social relationships, and social life changes. Speech recognition, economic assessment, and tools that gauge daily communication ease, social relationships, health,

and other aspects of quality of life are necessary to establish the effectiveness of implant⁵

After cochlear implantation parents were more satisfied with speech and language development, expanded social relationship, education, daily routine, outstanding improvement in communication skills, general function with the support of cochlear implant with increase in self confidence of their child. Parents anticipated hearing improvement to increase their safety of children in traffic and adapting socially to the auditory world.⁶

Parents assessed that cochlear implants influence their children in various ways. The capability to hear increased self-confidence and bettered relations with family, friends, and co-workers. The living standards enhanced vastly with extended job offers and social possibilities.⁷

MATERIALS AND METHODS

Firstly, we counsel the parents of hearing-impaired children and a self-designed questionnaire was used in data collection. The questionnaire is credible and consistent in investigating parental views and experiences on the improved lifestyle of the child after cochlear implantation. The questionnaire comprises 25 statements with different aspects like communication improvement, auditory skills, social relation, education and self-confidence, offered with multiple choices on five-point rating scale: disagree and strongly disagree, do not know, strongly agree, agree. Data was collected from "Audiology Centre" Audiology Centre, 63-3A, Sir Syed Road, Liberty Homes, Block D-1, Opp. Hijaz Hospital, Gulberg III, Lahore. Data was entered and analyzed using SPSS-25.

RESULTS

There were 26 (55.3%) females and 21 (44.7%) were males. According to age group 4-8 years which includes 27 (57.4%) subjects, 9-12 years which include 14 (29.9%) subjects and 13-16 years which include 6 (12.8%) subjects (Table 1). Communication domain contains 30 (63.9%) maximum spoken language communication and 18 (38.2%) minimum spoken language communication. The mean of this domain is 23.98. Self-reliance domain shows how the child is independent and it contains 17 (36.17%) maximum and 9 (19.14%) minimum. The mean of self-reliance is 14.21. The well-being and happiness domain shows

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behavior and attitude of child after implantation and it contains 12 (25.53%) maximum and 7 (14.89%) minimum. The mean of this domain is 9.62. Education domain contains 13 (27.65%) maximum and 3 (6.38%) minimum. The mean of education is 8.98. The effects of implantation domain contain 10(21.27%) maximum and 5 (10.63%) minimum. The mean of this domain is 8.53. Supporting the child domain shows how the family is concerning about their child the 8 (17.02%) maximum and 4(8.51%) minimum. The mean of this domain is 6.87 (Table 2).

Here correlation coefficient was utilized to identify potential association between various associated subscales to quality of life. Several statistically meaningful correlations between different subscales was identified. The sovereignty of a child was observed to be directly link to the strengthened verbal communication which further enhanced his/her social relationship. Refined spoken language progress was also connected with proficient interaction with family members, friends and relatives. Child's elevated well-being and satisfaction in his/her behavior and their parents were satisfied about their child's behavior. After implantation children enhance their communication ability so they were able to perform well in own school setting .They were also able to participate in extracurricular activities as well. Due to their improvement in communication, behavior, social relation and education parents have more positive views about the effect of implantation. Parents and other family member should be supported the child in all circumstances so the parents get positive response after implantation (Table 3).

Table 1: Demographic information of the subjects (n=47)

Variable	No.	%
Gender		
Female	26	55.3
Male	21	44.7
Age (years)		
4-8	27	57.4
9-12	14	29.8
13-16	6	12.8

Table 2: Descriptive statistics of domains (n=47)

Domain	Minimum	Maximum	Mean
Communication	18	30	23.98
S.R	9	17	14.21
W.H	7	12	9.62
Education	3	13	8.98
E.O.I	5	10	8.53
S.T.C	4	8	6.87

Table 3: Correlation of Domains (n=47)

Communication	S.R	W.H	Education	E.O.I	S.T.C
1	.399**	.196	.398**	.204	.014
-	.005	.187	.006	.168	.924
.399**	1	.356*	.229	.098	-.315*
.005	-	.014	.121	.512	.031
.196	.356*	1	.134	.249	.219
.187	.014	-	.368	.091	.140
.398**	.229	.134	1	.081	-.128
.006	.121	.368	-	.587	.392
.204	.098	.249	.081	1	.257
.168	.512	.091	.587	-	.081
.014	-.315*	.219	-.128	.257	1
.924	.031	.140	.392	.081	-

*P<0.05

**P<0.001

DISCUSSION

The families contained the subsequent sections: decision to implantation, implantation procedure, beneficial impact of the implant, exchange of information, assisting the child, self-sufficiency, emotional and physical well-being, social interactions, education, and pre- and post surgical care given by the center of implant. Even though speech and language progress were the key concern, parents reported as exceptional enhancement in communication skills, social interactions, and self-assurance for

their child.⁸ In another study, Huttunen et al⁹ conducted a study "parental opinions at the living standards of their children 2-3 years after cochlear implantation". Cochlear implants for children are recognized to affect the biographies of recipients and their families in multiple ways. To get a more obvious picture of these advantages, we investigated the living standards of 36 finalize children and their families 2-3 years after single-sided cochlear implantation. Parents were most pleased with bettered/extended social relationships, enhanced communication (the advancement of verbal communication), overall performance with the assistance of hearing and enhanced self-dependence of the child.⁹ In the present study, parents generally expressed immense pleasure with standard of living of their child and the family 2-3 years after implantation. Living standards is greatly impacted by cochlear implantation.¹⁰

Utilizing a questionnaire to parents mirror the opinion of people highly engaged in the procedure and outcomes after cochlear implant triggering in children of various age categories. It is acknowledged that quality of life among youngsters and adolescents who use cochlear implant is comparable to their normal hearing friends. Therefore, the group of children employing cochlear implant, the utilize of questionnaires with parents enables us to evaluate children's quality of life, in addition to their relatives' and parents', or the relation between all of them.¹¹

Parents' aspirations were accomplished best in augmented communication (the advancement of Verbal language), social relation, self-reliance with the assistance of hearing, and upgraded education of the child.¹² Regarding to the results of recent study, cochlear implant had a clear impact on the Quality of life of children and their families in different variety of ways. All things linking to children had enhancement in Quality of life after cochlear implant activation. Parents were more pleased with the disciplines self-reliance, social relations and communication because it affects more on child's life.¹³

CONCLUSION

Cochlear implantation, habilitation and speech therapy offered post-surgery refined living standards of youngsters and their families. Availability to hearing information guided the youngsters to bring together the hearing world and comprehend to speak. From the parents' stance, cochlear implant enhances the QoL of their children, specifically when it reaches to self- assurance, social connections and communication. Parents were more satisfied with their child's overall performance.

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