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Dr. Pramod Kumar Kulhade
Principal, Renu Vidya Mandir,
Bahalgarh, Sonipat, Haryana,
India

Quality of life of divyangjan with hearing impairment with reference to their interaction in inclusive schools of Sonipat Haryana

Pramod Kumar Kulhade

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Abstract

We all have five fundamental sense organs; out of these hearing is vital for us. Hearing Impairment is an imperceptible impairment. It obliges a significant lag in interaction with others, social development, breakdowns in social communication and isolation from educational system as well as from participation in school set-up. Interaction of any individual with others depends on his/her area of interest, support services, communication skill with others and it plays a vital role to determine his/ her quality of life. Many assistive devices like Cochlear Implant, Behind the Ear (BTE) hearing aid etc. have been used for developing their interaction and participation in school. Nowadays various platforms are available for betterment of interaction level of Divyangjan with hearing impairment with others like inclusive school, special school, society etc. Divyangjan with hearing impairment who received superior interventional services at critical age with good habilitation measures may have good language abilities resulting in a better interaction with normal society valued interaction level & social role in current Indian society. As a consequence, a large proportion of children with hearing impairment now attend inclusive education from an early age. This paper focuses on interaction in inclusive school and quality of life of Divyangjan with hearing impairment using different types of assistive devices & habilitation services. Ten normal teachers & five special educators working with hearing impaired Divyangjan in different inclusive schools in Sonipat, ten students with hearing impairment using Behind the Ear (BTE) hearing aid & five students with hearing impairment using cochlear implant (CI) were purposively selected as a sample of present study. Responses were collected with the help of a questionnaire and observation from inclusive school normal teachers as well as special educators working with children with hearing impairment in inclusive schools. Results revealed that Hearing Impaired Divyangjan having a CI in early age have better interaction level than BTE users. Findings also suggest that enrolment in inclusive school in early age, better amplification devices and other related factors significantly affect the quality of life of Divyangjan with hearing impairment in society and at school.

Keywords: Interaction, hearing impairment, inclusive school, cochlear implant (CI), behind the ear (BTE) hearing aid, quality of life

Introduction

We have five basic sense organs gifted by god, hearing is one of them. Without hearing we can't survive in our society. Hearing plays an important role in student development and daily performance. Hearing impairment occurs when there's a problem with or damage to one or more parts of the hearing mechanism. Normal hearing is generally defined as having a hearing threshold of 20dB or better across the frequencies of 250 Hz to 8000Hz this means that an individual can hear sounds at these frequencies at a level that is considered typical for the general population. In clinical settings, audiologists often use pure-tone audiometry to assess hearing thresholds and determine if an individual falls within the normal hearing range. If an individual's hearing thresholds are within this thresholds range, they are typically classified as having normal hearing. Normal hearing is the ability to perceive sounds within the typical range of human hearing, which is generally considered to be between 20 Hz and 20,000 Hz. It encompasses the ability to hear sounds at various volumes and pitches, allowing for clear understanding of speech and other auditory information.

Correspondence Author:

Dr. Pramod Kumar Kulhade
Principal, Renu Vidya Mandir,
Bahalgarh, Sonipat, Haryana,
India

Hearing Impairment

A person who is not able to hear as well as someone with normal hearing - hearing thresholds of 20 decibel or better in both ears - is said to have hearing loss. Hearing loss may be mild, moderate, severe or profound. It can affect one ear or both ears and leads to difficulty in hearing conversational speech or loud sounds (World Health Organization). Hearing Impairment is defined by IDEA as an impairment in hearing, whether permanent or fluctuating, that adversely affects a child's educational Performance.

Hearing Impairment: Hearing impairment means loss of sixty decibels or more in the better ear in the conversational range of frequencies. There are many definitions of hearing impairment. By far most common division is between deaf and hard of hearing.

According to Hallahan & Kauffman (1991) ^[14], children who cannot hear sounds at or above ascertain intensity (loudness) level are classified as deaf; others with a hearing loss are considered hard of hearing. Hearing sensitivity is measured in decibels (unit of relative loudness of sounds); zero decibels (0 dB) designate the point at which people with normal hearing can detect the faintest sound. Each successive number of decibels indicates ascertain degree of hearing loss.

Brill, McNeil, & Newman (1986) ^[15] have provided separate definitions of hearing impairment, deafness, and hard of hearing. According to them, hearing impairment is a generic term indicating a severity from mild to profound; hearing impairment includes the subsets of deaf and hard of hearing. According to RPWD Act 2016 ^[16], Hearing impairment is a partial or total inability to hear. It is a disability sub-divided into two categories deaf and hard of hearing.

- "Deaf" means a person having 70 dB hearing loss in normal speech frequencies in both the ear.
- "Hard of hearing" means a person having 60 dB to 70 dB hearing loss in speech frequencies in both ears. (RPWD Act, 2016) ^[16].

Quality of Life

Quality of life is a highly subjective measure of happiness that is an important component of many financial decisions. Factors that play a role in quality of life vary according to personal preferences, but they often include financial security, job satisfaction, family life, health and safety. Financial decisions usually involve a tradeoff where quality of life is decreased in order to save money or, conversely, quality of life is increased by spending more money.

Quality of Life as an individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns. It is a broad ranging concept affected in a complex way by the person's physical health, psychological state, personal beliefs, social relationships and their relationship to salient features of their environment. (WHO)

The World Health Organization describes QOL as a broad-ranging concept that incorporates individual's physical health, psychological state, level of independence, social relationships, personal beliefs and their association to salient features of the environment.

Quality of life (QOL) is the general well-being of individuals and societies, outlining negative and positive features of life. It observes life satisfaction, including

everything from physical health, family, education, employment, wealth, religious beliefs, finance and the environment.

QOL may be defined as subjective well-being. Recognizing the subjectivity of QOL is a key to understanding this construct. QOL reflects the difference, the gap, between the hopes and expectations of a person and their present experience. Human adaptation is such that life expectations are usually adjusted so as to lie within the realm of what the individual perceives to be possible. This enables people who have difficult life circumstances to maintain a reasonable QOL. - Janssen *Quality-of-life Studies*

According to *Quality of Life Research Unit, University of Toronto* Quality of life is the degree to which a person enjoys the important possibilities of his/her life. Possibilities result from the opportunities and limitations each person has in his/her life and reflect the interaction of personal and environmental factors. Enjoyment has two components: the experience of satisfaction and the possession or achievement of some characteristic, as illustrated by the expression: "She enjoys good health." Three major life domains are identified: Being, Belonging, and Becoming. The conceptualization of Being, Belonging, and Becoming as the domains of quality of life were developed from the insights of various writers.

In quality of life research one often distinguishes between the subjective and objective quality of life. Subjective quality of life is about feeling good and being satisfied with things in general. Objective quality of life is about fulfilling the societal and cultural demands for material wealth, social status and physical well-being. -*Quality-of-Life Research Center, Denmark*

Interaction

An interaction grossly speaking is a transaction between two entities, typically an exchange of information but it can also be an exchange of goods or services.

Every day, teachers make countless real-time decisions and facilitate many of interactions between themselves and their students. Although they share this commonality, educators all over the country often talk about these decisions and interactions in different ways.

Student interaction factors: as a teacher we need to know some basic factors as follows

- Know our students. In addition to their names and experiences, determine their skills and knowledge.
- Create a welcoming learning environment. Make students feel comfortable and important.
- Set and communicate expectations.
- Encourage students to interact positively with one another.

Interaction is the activity of being with and talking to other people, and the way that people react to each other

Social interaction is a fundamental kind of interaction included a large number of behaviors so many that in sociology. Interaction is usually divided into five categories. These are: exchange, competition, cooperation, conflict and coercion. Social interaction involves people communicating face to face or via computer and acting and reacting in relation to other people.

In statistics, an interaction may arise when considering the relationship among three or more variables, and describes a

situation in which the effect of one causal variable on an outcome depends on the state of a second causal variable (that is, when effects of the two causes are not additive).

Inclusive Education

Inclusive education is an approach to educating Divyangjan. Under the inclusion model, Divyangjans spend most or all of their time with non-disabled students. When children with special needs (CWSN) learn in the same school as their non-disabled colleagues with the support necessary for them to succeed there, society is said to be "inclusive." All students in a school, anyhow of their strengths and weaknesses in any area, become part of the school association.

A "team approach" is very pivotal for inclusion. Some of the leading players could be regular school teachers, parents, community, resource teachers, normal children, Divyangjan, and so on. Inclusive Education helps Divyangjan to prepare for full participation in community life. Inclusion settings allow children with and without impairment to play and interact every day, even when receiving therapeutic services. When a child displays fine motor difficulty, his ability to fully participate in common classroom activities, such as cutting, coloring, and zipping a jacket, may be hindered.

UNESCO defines inclusive education as a procedure of conveying and acknowledging the diversity of needs of all students through expanding the participation in learning, cultures, and communities and decreasing debarring with in and from education. Inclusive education implies changes and modifications in content, approaches, structures, and strategies, with a shared vision that covers all children of the applicable age range and an assurance that it is the duty of the state government to educate all children. Inclusive education is not a slight issue but is central to achieving high-quality education for all students and the development of more inclusive societies.

The term "Integration" and "Inclusion" in the education of children with disabilities comes mainly from a concern for the right of education and young people with special educational needs. Paradoxically, the moment we think of providing resources for equal access, it inevitably results in identification leading to segregation of these children who are different and have special educational needs. The concept of inclusion has emerged from the idea of providing equal opportunities to 'all' children. Providing equal opportunities does not mean providing 'similar' things to all children. It means providing equal opportunities keeping in mind the diverse nature of their individual needs. We need to acknowledge the responsiveness to the diverse need of 'all' children are standard, and others are lacking and therefore need to be repaired in some ways is still an attendant of a society that values consistency rather than diversity.

Meaningful inclusion cannot be accomplished by special education teachers working alone. It also does not help to have a temporary 'deal' with the regular school teachers to 'take care' of their students. The new school policy is also referred to as the social or environmental model and rests on the theory that the child is a product of his/her experiences and interventions with various environments that impinge upon him/her. Thus to a great stretch, a child's growth and development depend upon this.

- Educating children with disabilities (Divyangjan) in the schools they would take part in if they did not have impairment.
- Furnish services and support that parents and children with disabilities need to be in a common setting.
- Supporting general education teachers and administrators.
- Children with disabilities follow the same time table as other children encourage friendship between children with disabilities and their classmates/peers without disabilities.
- Teachers and administrators take these scrutinize solemnly.
- Teaching all students to understand and accept differences. (UNESCO-as the UN-Committee on Rights of the Child, October 6, 1997- Centre for Human Rights, Geneva)

In particular, four key elements have tended to feature strongly in the conceptualization of inclusion. The four elements are as follows:-

- **Inclusion is a process.** That is to say, inclusion has to be discerning as an endless search to find better procedures for answering diversity. Inclusion is about learning how to live with dissimilarity and learning from differences. In this way, the difference comes to be seen more positively as a stimulus for fostering learning amongst children and adults.
- **Inclusion is concerned with the reorganization and discarding of barriers.** Thus, it involves collecting, collating, and evaluating information from various sources to plan for improvements in policy and practice. It is about using affirmation of various kinds to stimulate creativity and problem-solving.
- **Inclusion is about the presence, Participation, and achievements of all learners.** Here 'presence' is bothered with where children are educated and how reliability and punctually they attend; "participation" relates to the quality of their experience while they are there and, therefore, must assimilate the commands of the learners themselves, and "achievement" is about the outcomes of learning across the curriculum, not merely test or examination result.
- **Inclusion involves a particular emphasis on learners at risk of marginalization, exclusion, or underachievement.** This stipulates the moral responsibility to ensure that those statistically most "at-risk" groups are carefully monitored and that, where requisite, steps are taken to ensure their presence, participation, and achievement in the education system. It is essential to highlight that a holistic view of the education system, encompassing both the private and public systems, must consider adopting an inclusive approach.

Usually Divyangjan with Hearing Impairment are at significant risk of limited opportunity of interaction in various aspects at school. Their restrictions due to their disability have significant lifetime consequences on their achievement, quality of life and wellbeing. There are several issues that influence better interaction of divyangjan with hearing impairment in various school activities resulting in their poor achievement level and sometimes dropout as

compared to their non-disabled peers. Interaction in classroom is an important aspect of student achievement in their school. When students interact in classroom activities, they learn to express their ideas in a way that others can understand. When they ask questions, they learn how to obtain information to enhance their own understanding of a topic. Interaction with others is also a valuable learning tool for teachers. Through students' questions, teachers learn what they don't understand, and can adjust their way of instruction accordingly, search for innovative ways to teach a particular subject or topic. Skill related to public speaking doesn't come easily to many adults however; speaking up in class is a struggle for many students. That struggle might manifest itself in the classroom in a variety of ways like not volunteering to answer the questions, not asking for help as and when required, not speaking up in small-group activities, even not talking in class at all.

Due to Hearing Impairment and late identification & intervention of hearing impairment divyangjan with hearing impairment has less vocabulary. Hearing impairment affects speech & language development of divyangjan with hearing impairment which is one of the major prerequisite of communication skill. Interaction with classmates, teachers and school authorities are basically related with communication skill and participation in classroom activity of any individual. Delayed speech and language makes divyangjan with hearing impairment limited friend & low interaction level & quality of life.

Involvement in curricular and co-curricular activities in a specific school or learning environment of any individual determines the level of interaction & quality of life. Quality of life of Divyangjan with hearing impairment has been gravely affected due to their impairment. For improving the quality of life & interaction level of Divyangjan with hearing impairment Government of India emphasizes on implementing the policy of Inclusion where every Divyang student with hearing impairment has equal participation in all educational and social activities but in practical, Divyangjan with hearing impairment have been facing a lot of problems. Generally they are using sign language for communication which is difficult to be understood by their classmates with normal hearing, teachers and other school authorities as well as society member. This communication gap creates a lot of barriers in his/her role & quality of life due to lack of resources or support service, awareness etc. An investigation needed how hearing impairment affects their interaction with others & quality of life of Divyangjan with hearing impairment in all aspects of life.

Objectives of the study

The objectives of this study were two-fold: first to study the level of interaction of Divyangjan with hearing impairment using cochlear implant and the second to study the level of interaction of Divyangjan with hearing impairment using Behind the Ear (BTE) hearing aid.

Review of related literature

Carter and Hughes (2005) ^[1] conducted a study on Increasing Social Interaction among Adolescents with Intellectual Disabilities and Their General Education Peers: Effective Interventions. This research indicates that peer interaction can substantially impact the lives of adolescents with impairments. Although, social interaction among adolescents with intellectual disabilities and their general

education colleagues infrequently happens in secondary schools. This study provides a critical analysis of twenty-six practical interventions promoting social interaction among adolescents with mental retardation and their general education peers in middle and high school settings. Findings are analyzed concerning intervention components, student characteristics, interaction settings, measures of interaction; observation procedures; experimental designs; intervention components; and measures of generalization, social validity, and treatment integrity. Based upon findings from this literature, we present recommendations to guide future research and the development effective social interaction interventions for adolescents with intellectual disabilities in middle and high schools.

Nordstrom (2011) ^[2] conducted a study on Inclusion and participation in peer relations. The study aimed to contrast interaction and relations among school children with intellectual impairment and the same children's interaction or relations with non-impaired colleagues. Twenty-four children with intellectual impairment between age group 7-16 years were selected in study group one. The children spent remarkably more time in active participation in parallel relations to peers with similar functional prerequisites than active participation in vertical relations to children without intellectual impairment. Together with the same age level with similar functional prerequisites, each contributes to everyday activity to about the same extent. They have equal every day experiences and create a colleague culture based on acceptance, shared norms, and interests with children with different functional prerequisites, their influence on interaction conditions becomes minimal, and criticism grows. Colleague relations are subjectively experienced as deeply problematic, self-assessments as to peer relations are low-rated. Social exchanges in their own colleague culture seem to be enlarging. Data are debated in terms of school inclusion, participation in peer culture, and self-perception.

Chung, Carter, and Sisco (2012) ^[3] conducted a study on Social Interactions of Augmentative and Alternative Communication (AAC) used students with disability in Inclusive Classrooms. The purpose of this study was to examine the naturally occurring social interactions for students with impairments who use AAC in general education classrooms. The researcher observed 16 students who used AAC and received services under the autism or intellectual disability categories. Participants fundamentally interacted with their support personnel and infrequently conversed with peers despite being nearby. Few interaction episodes were initiated by students who used AAC, and initiations to peers and adults appeared to serve somewhat different functions. Students with disabilities relied more heavily on facial expressions and gestures than on their AAC devices. Recommendations for student interaction opportunities are offered, and future research directions are suggested.

Khalid N. Alasim (2018) ^[4] conducted a study on Participation and Interaction of Deaf and Hard-of-Hearing Students in Inclusion Classroom. The purpose of the study was to identify the barriers that concern the participation of students with hearing impairment in inclusive education setting, as well as to identify strategies that facilitate their interaction with their hearing peers and teachers. Furthermore, this study identified appropriate accommodations that assist Deaf and hard of hearing

students to participate and interact effectively in the general education classroom. The data were collected through interviews and classroom observation. The finding indicates that Deaf and hard of hearing students face barriers that concern their participation and interaction in the general education classroom. Also, the findings identified specific strategies in order to facilitate the participation of Deaf and hard of hearing students in the general education classroom. Janine Joy L. Tenerife *et al.* (2021) ^[5] conducted a study on social interaction and academic performance of deaf and hard of hearing students in cebu city, philippines. This research assessed the social interaction and the academic performance of the deaf and hard of hearing students in a school for the deaf in Cebu City, Philippines. There were 49 respondents who were assessed in terms of their social interaction and academic performance. A survey questionnaire was used to assess the level of their social interaction and their grades were used to measure their academic performance. Data gathered were treated statistically using descriptive and inferential statistics. Results showed that the respondents had an average age of 19.5 years old that are deaf with 3 to 4 siblings. The respondents had high social interaction with their teachers and peers but had moderate social interaction with their

family members and very low social interaction with the hearing students. They perform satisfactorily in school. There were significant relationships between their interaction with their family members and the hearing students. Thus, school administrators are encouraged to design programs that would improve the social interactions of the deaf and hard of hearing students within the school community and at home.

Methodology

- **Research Design:** The research design of the present study is of survey type. In modern scientific research, survey is taken as a primary and common method of collecting data. In order to collect the data purposive technique was used.
- **Sampling:** Total 15 Divyangjan with Hearing Impairment using different type of amplification devices, 30 normal peers, 10 Normal teachers trained in general education working in inclusive schools of Sonipat district, 05 Special educators trained in special education working in inclusive schools in district Sonipat were selected from inclusive schools of Sonipat Haryana as sample of this study.

Distribution of Divyangjan with Hearing Impairment on the basis of amplification devices used

	Behind The Ear (BTE) user	Cochlear Implant (CI) user
Male	07	02
Female	03	03
Total	10	05

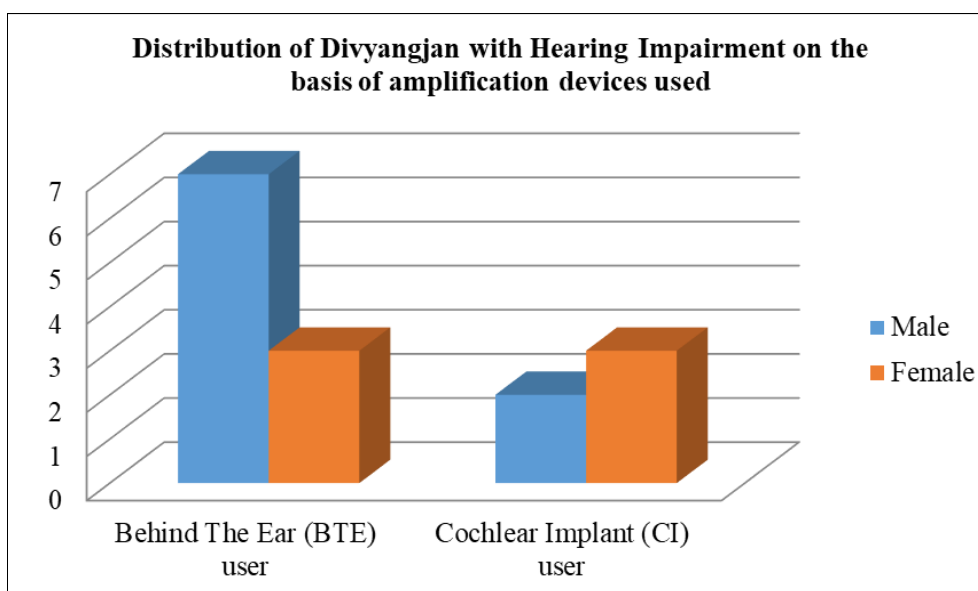


Fig 1: Shows the distribution of Divyangjan with Hearing Impairment on the basis of amplification devices used

Rehabilitation Qualification of Special Educators selected as sample

Rehabilitation Qualification	No. of Special Educators	Percentage (%)
D.Ed. (Spl. Edu.)	01	20
B.Ed. (Spl. Edu.)	01	20
M.Ed. (Spl. Edu.)	03	60
Total	05	100

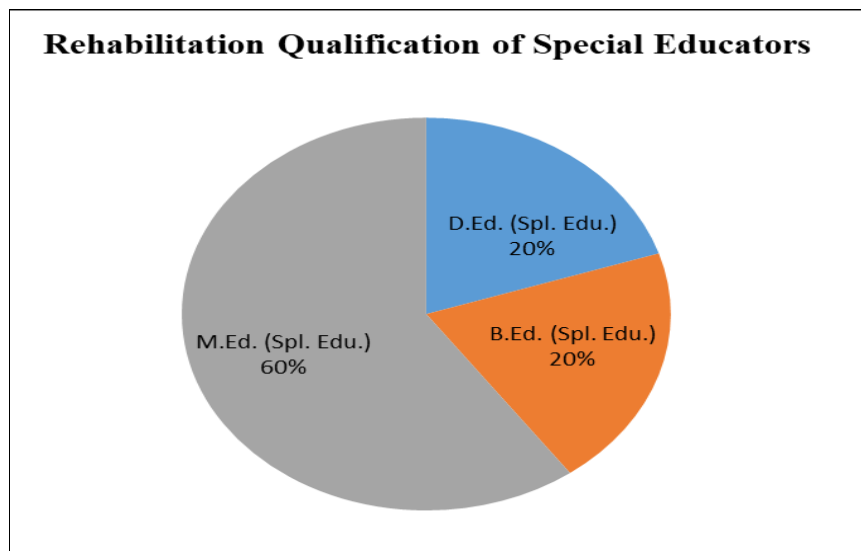


Fig 2: Shows the rehabilitation qualification of special educators

Academic Qualification of General Teacher selected as sample

Academic Qualification	No. of General Teacher	Percentage (%)
B.Ed. & Above	07	70
Below B.Ed.	03	30
Total	10	100

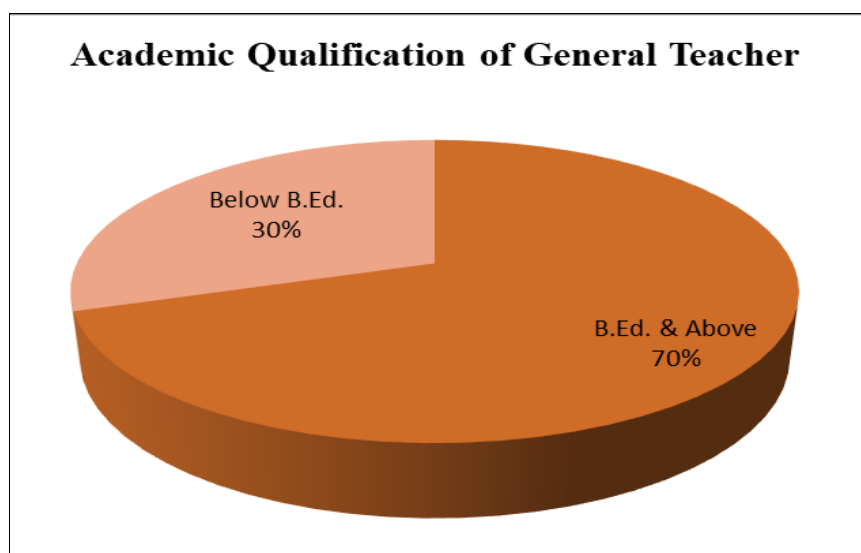


Fig 3: Shows the academic qualification of general teachers

Preparation of Tool: A questionnaire has been prepared as a tool for the study. A draft questionnaire was developed to assess the interaction of Divyangjan with hearing impairment in the area of classroom interaction, interaction with others, quality of life.

Validation

In order to validate the questionnaire a validity test by carried out with the help 10 randomly selected judges having more than 5 years of experience in the field of rehabilitation and special education of Divyangjan with hearing impairment. All the judges were given appropriate instructions & requested to make corrections and/or add new questions as they think relevant. However, the questionnaire was modified and finalized based on the response given by the judges.

Procedure: Received permission from inclusive schools and special schools authorities working with divyangjan with hearing impairment to collect data. Responses from special educators working with divyangjan with hearing impairment and normal teachers working in inclusive schools on questionnaire that consist questions related to interaction of divyangjan with hearing impairment in interaction during curricular and social activities at school were collected. All five special educators has required rehabilitation qualification and on average three years experienced to working with divyangjan with hearing impairment all ten normal teachers has required academic qualification and on average three years experienced to working in inclusive education system. Fifteen students with hearing impairment using cochlear implant & behind the ear hearing aid studying in inclusive schools from two different special schools in Sonipat were selected as a sample of this

study. Responses from all fifteen students with hearing impairment using behind the ear hearing aid and using cochlear implant on questionnaire that consist questions related to interaction of divyangjan with hearing impairment in interaction during curricular and social activities at school. Responses from all fifteen normal teachers & special educators working with students with hearing impairment on questionnaire that consist questions related to interaction of divyangjan with hearing impairment in interaction during classroom activities, curricular and social activities at school.

Data analysis: Differences of interaction in inclusive schools & quality of life between students with hearing impairment using BTE hearing aid and cochlear implant are analyzed descriptively. On research tool questions related to interactions, teachers working in inclusive schools and students with hearing impairment using cochlear implant and behind the ear hearing aid give their opinion that divyangjan with hearing impairment that uses cochlear implant shown better interaction than divyangjan with behind the ear hearing aid user. Questions related to interaction in classroom, curricular activities, interaction with other school authorities, social interaction at school that included in research tool both teachers and special educators says that divyangjan with cochlear implant user shown better interaction than divyangjan with behind the ear hearing aid user, some of the selected sample says that divyangjan with hearing impairment those fitted cochlear implant in early age and received proper rehabilitation services like as auditory verbal therapy shown better interaction with others. Questions related to interaction in inclusive school, views of selected samples suggested that divyangjan with cochlear implant user shown better interaction in classroom interaction in inclusive school as well as interaction with others than divyangjan with behind the ear hearing aid user.

Result and Discussion

On the basis of objectives framed by researcher the findings of present study shows that divyangjan with hearing impairment using cochlear implant shows better interaction than divyangjan with hearing impairment using behind the ear hearing aid. Findings also suggest that assistive technology like cochlear implant and appropriate therapy like auditory verbal therapy may help in wellbeing of children with hearing impaired in inclusive schools and others.

Delimitation of the study

The sample size chosen for the study was taken from only two inclusive schools in Sonapat district, Haryana for the hearing impaired it is the need to complete the study within a large population.

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