ORIGINAL RESEARCH PAPER
Volume - 15 | Issue - 05 | May - 2026 | PRINT ISSN No. 2277 - 8179 | DOI : 10.36106/ijsr
INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

ACCESSIBILITY AND HEALTHCARE SYSTEM FACTORS INFLUENCING UPTAKE OF NEONATAL HEARING SCREENING IN INDIA

Audiology

Sneha Lata PhD Scholar, AuD Student, Masters in Audiology and Speech-Language Pathology Senior Clinical Specialist

ABSTRACT

The research sheds light on the need for neonatal hearing screening and the sociocultural issues that prevent a better facilitation of policies to increase such processes. This is more prevalent in South Asian countries, which have certain stigma and socio-economic repercussions regarding the screening programs. Using a statistical analysis of the survey dataset, the research finds that parents are willing to delay their child's neonatal hearing screening in case there is no sign of hearing issues in them. This indicates a need for better awareness campaigns to increase the hearing screening processes of newborn children and manage hearing loss more effectively.

KEYWORDS

Neonatal Hearing Screening, Healthcare Accessibility, Health System Factors, Screening Uptake, Early Detection, India

INTRODUCTION

OVERVIEW

Neonatal hearing screening falls within the scope of newborn hearing screening in India, considering the differences in the screening and measurement process. This is considered a targeted approach to understanding the signs of hearing loss among children within 1 month of their birth. Early detection and timely diagnosis of any hearing-related issues are considered within the screening procedure, and interventions are made by the 6th month for the child (Nicholson *et al.* 2022). Hearing loss among children in their neonatal phase can be difficult to identify, requiring neonatal hearing screening processes. In India, although healthcare indices are improving, hearing disability remains a major concern among the masses (Verma *et al.* 2021). The hearing screening opportunities among newborn children remain considerably low due to limited awareness and expertise in detecting hearing issues at an early stage upon birth.

Rationale

The main problem within India's healthcare system is that despite its wide expertise and opportunities, accessibility remains a concerning factor. According to the Rehabilitation Council of India (RCI), 4 out of 1000 newborns in India are found to have hearing loss, with only a select number of institutions carrying out neonatal hearing screening for identifying the issue among newborns (Rajanbabu *et al.* 2024). This shows a major setback among India's hearing screening programs for newborns, as the systematic disparity has restricted the process.

Lack of awareness and parents' financial capacity also further stretch this disparity, increasing the prevalence of hearing loss among newborn children. Growing up, these children are often seen to have difficulties in language development due to their disability and having no communication or support channel to help them navigate their life. This research is conducted in the emergence of growing cases of hearing loss among newborn children in India, and attempts to develop feasible solutions for reducing the problem.

Aim and Objectives

Aim

This research aims to find a deliverable solution for enhancing the awareness and healthcare opportunities for neonatal hearing screening in India.

Objectives

- To understand the impact of neonatal hearing screening on children's well-being and health
- To identify the socioeconomic and cultural barriers that restrict neonatal hearing screening, and the possible challenges faced by children as a result of this
- To propose solutions which can increase the accessibility and affordability of neonatal hearing screening programs in India

Literature Review

Accessibility Barriers to Neonatal Hearing Screening

Barriers in neonatal hearing screening are more prevalent due to the socioeconomic and cultural repercussions around the prospect of becoming disabled. For a child, a hearing disability could become a major aspect of their life, affecting them even in adulthood. However, socioeconomic restrictions regarding the cost of the screening procedure and observation requirements are often not met by people from socially backward families (Yan *et al.* 2022). Furthermore, it is also another concern that due to the lack of economic and sociocultural awareness or opportunity, it is often hard to find professionals who actively insist on doing neonatal screening for newborns. These barriers are fundamentally created by the lack of a structural reform, especially in Southeast Asian countries.

Healthcare System Capacity and Infrastructure

In addition to socioeconomic and cultural barriers, healthcare system capacity and infrastructure also need to be taken into account while developing a health plan for early neonatal hearing screening. The estimated cost of neonatal hearing screening and additional intervention methods of proper diagnosis and treatment are often difficult to carry out by the children's parents (Sharma *et al.* 2022). On the other hand, a lack of awareness and initiative to make neonatal hearing screening a mandatory test also creates a lack of capacity in the healthcare system. As per the views of Athanasopoulos *et al.* (2024), early interventions like hearing aids, cochlear implants, and speech therapy can enhance the children's capacity to perceive sound, setting the stage for their unique yet successful navigation in life. However, early intervention can only be conducted once the hearing issues are discovered with the help of neonatal hearing screening through a better infrastructure that promotes accessibility for all.

Socio-cultural and Policy Influences

As an extension of socio-cultural barriers, policy changes have also impacted the way neonatal hearing screening is overseen, especially in developing countries where resources and infrastructure are limited. The major cause is no structural policy changes regarding the implementation of screening methods, along with sociocultural stigma around disability among children (Aldè *et al.* 2025). Especially due to diverse and prejudiced cultural perspectives, along with gender differences and the prevalence of hearing loss, makes it difficult for policymakers to overcome the barrier and establish clear guidelines for the screening process.

Literature Gap

The literature review has taken into account certain gaps in its development and insight. For example, the review does not take into account any specific country and its data to draw its conclusion. There is also a lack of existing studies on the applicability of healthcare policies that directly affect neonatal hearing screening among children. This reduces the scope for wider research, especially in a country like India, where the issue is ever-growing, and policy reforms are scarce. This research attempts to cover that gap and create a better opportunity for people to be able to access the hearing screening process in the future.

METHODOLOGY

Developing research requires the selection of a specific type of data, as per the researcher's convenience. Usually, two kinds of data collection processes are available for research purposes- primary and secondary. Primary data is the process of gathering data from first-hand accounts, like human participants who can provide their own insight and opinions. On the other hand, secondary data collection is the process of collecting data from already published contents like peer-reviewed articles, books and journals. There are potential chances of ethical

integrity violations along with the bias from the existing studies (Baldwin *et al.* 2022). Hence, this research has applied the use of the ***Primary Data Collection*** method and gathered quantitative data in the form of a survey with 151 participants.

Furthermore, a ***Statistical Analysis*** method has been applied to assess the primary qualitative data in this research. Statistical analysis helps to understand the correlation, mean and variables in a quantitative data set. Furthermore, using the SPSS software has helped to present graphical views of the data and provide a better descriptive analysis (Rahayu *et al.* 2024). The statistical analysis has helped to analyse the dataset in a more structured manner, providing accurate analysis through graphical illustrations that have enhanced the data analysis process.

Findings

Table 1: Descriptive Statistics

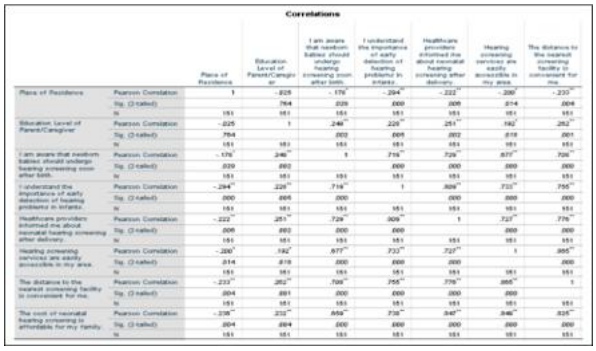
Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Place of Residence	151	0	1	.45	.499
Education Level of Parent/Caregiver	151	0	3	1.66	1.101
I am aware that newborn babies should undergo hearing screening soon after birth.	151	0	4	2.77	1.401
I understand the importance of early detection of hearing problems in infants.	151	0	4	2.81	1.360
Healthcare providers informed me about neonatal hearing screening after delivery.	151	0	4	2.76	1.370
Hearing screening services are easily accessible in my area.	151	0	4	2.85	1.344
The distance to the nearest screening facility is convenient for me.	151	0	4	2.75	1.367
The cost of neonatal hearing screening is affordable for my family.	151	0	4	2.79	1.335
The hospital where my child was born provides neonatal hearing screening services.	151	0	4	2.89	1.324
Adequate medical staff and equipment are available for hearing screening.	151	0	4	2.77	1.383
The screening process is simple and well-organised in healthcare facilities.	151	0	4	2.75	1.434
Family beliefs or cultural practices influence decisions about newborn health check-ups.	151	0	4	2.83	1.360
I would delay screening if I believed my child showed no visible hearing issues.	151	0	4	2.70	1.327
I am willing to ensure my newborn undergoes hearing screening within the first month of birth.	151	0	4	2.75	1.259
Valid N (listwise)	151				

(Source: IBM-SPSS)

Awareness, access, and intention toward neonatal hearing screening are moderate (mean responses range from 2.7 to 2.9). Variability, however, implies inconsistent knowledge, service availability, and cultural influences on participants' uptake of timely services.

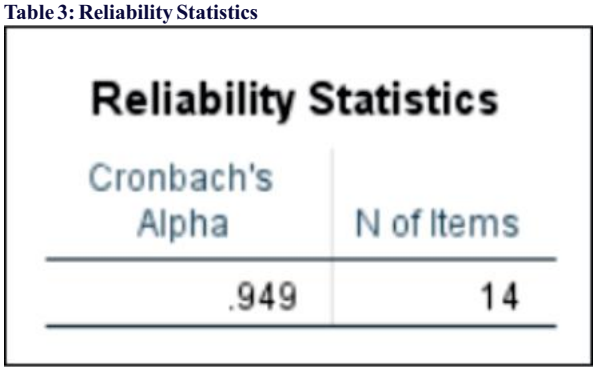
There are significant positive correlations among awareness, accessibility, and healthcare factors, indicating interdependent effects on screening uptake. Education is associated with increased awareness, whereas residence is associated with negative impacts. Delays and willingness have a great influence, especially under the influence of cultural beliefs and perceived need.

Table 2: Correlation



(Source: IBM-SPSS)

Table 3: Reliability Statistics



(Source: IBM-SPSS)

The scale shows great reliability (Cronbach's Alpha=0.949), which elicits high internal consistency between the 14 items, which shows that the questionnaire is highly reliable to measure the factors in neonatal hearing screening.

Figure 1: Residence's Place
(Source: IBM-SPSS)

The percentage of urban respondents is 54.97%, and the rural percentage is 45.03%.

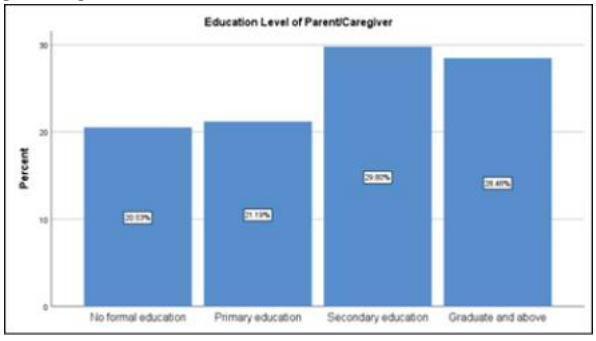


Figure 2: Parents' Education Level
(Source: IBM-SPSS)

The education level of respondents is 20.53% no formal, 21.19% primary, 29.80% secondary, and 28.48% graduate or above.

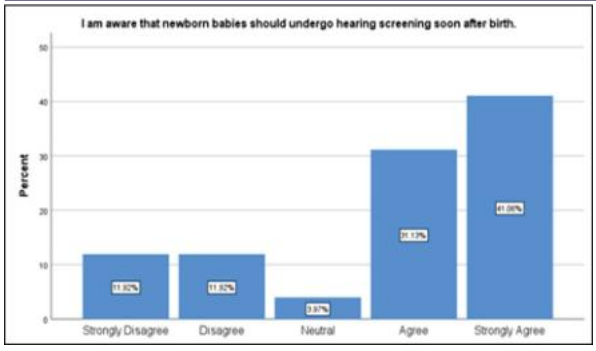


Figure 3: Awareness of Hearing in Newborns
(Source: IBM-SPSS)

There is a high awareness, 41.06% strongly agree, and 31.13% agree, while 11.92% disagree, 11.92% strongly disagree, and 3.97% neutral.

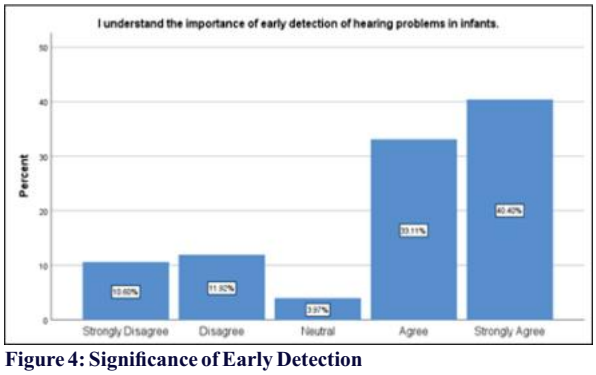


Figure 4: Significance of Early Detection
(Source: IBM-SPSS)

Knowledge is high, with 40.40% strongly agree, 33.11% agree, however, 11.92% disagree, 10.60% strongly disagree, and 3.97% remain neutral.

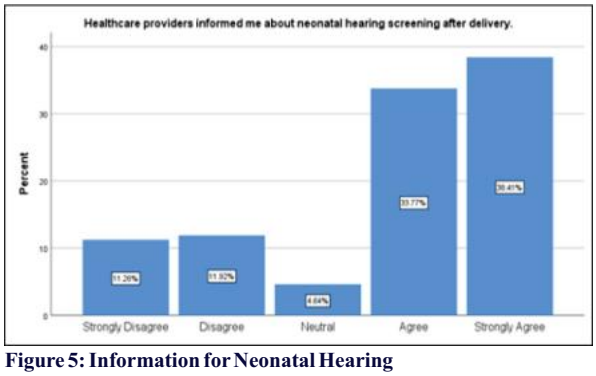


Figure 5: Information for Neonatal Hearing
(Source: IBM-SPSS)

38.41% strongly agree, and 33.77% agree, whereas 11.92% disagree, 11.26% strongly disagree, and 4.64% remain neutral.

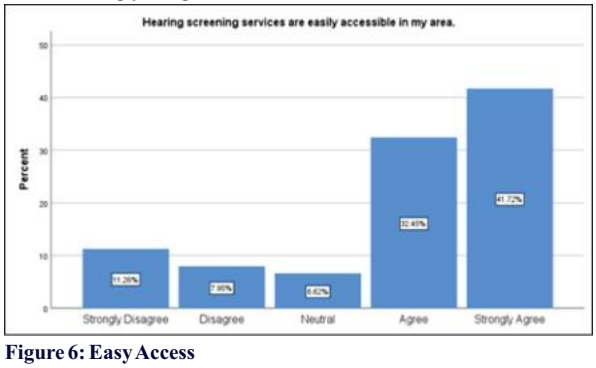


Figure 6: Easy Access
(Source: IBM-SPSS)

There is a high accessibility with 41.72% strongly agree, and 32.45% agree; nonetheless, 7.95% disagree, 11.26% strongly disagree, and 6.62% neutral.

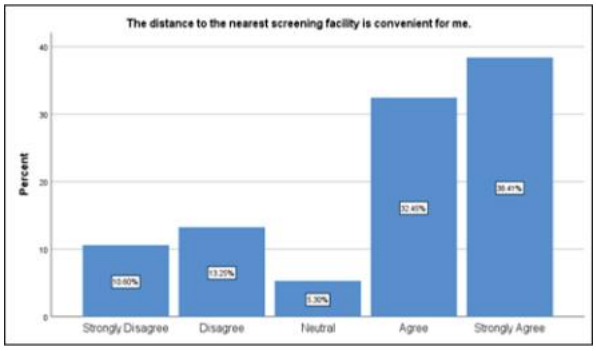


Figure 7: Convenient Distance
(Source: IBM-SPSS)

38.41% strongly agree, 32.45% agree, 13.25% disagree, 10.60% strongly disagree, 5.30% neutral.

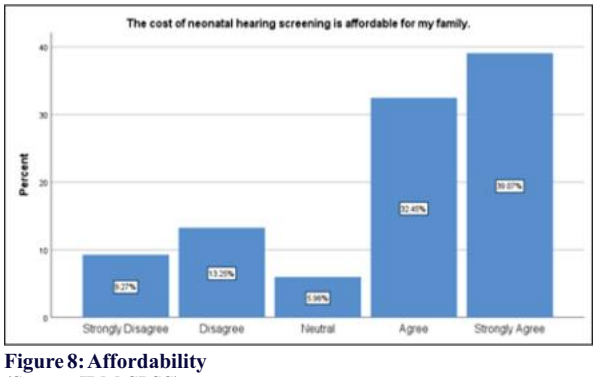


Figure 8: Affordability
(Source: IBM-SPSS)

39.07% strongly agree, 32.45% agree, while 13.25% disagree, 9.27% strongly disagree, and 5.96% remain neutral.

Figure 9: Hospital Service Available
(Source: IBM-SPSS)

Availability is high with 43.05% strongly agree, and 32.45% agree; however, 11.26% disagree, 9.27% strongly disagree, and 3.97% are neutral.

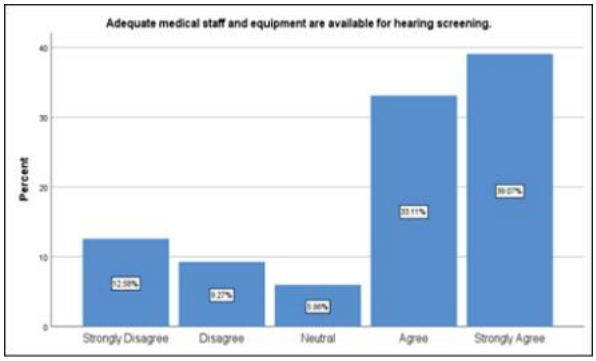


Figure 4.10: Available Staffs

(Source: IBM-SPSS)

39.07% strongly agree, and 33.11% agree, whereas 9.27% disagree, 12.58% strongly disagree, and 5.96% of the respondents were neutral.

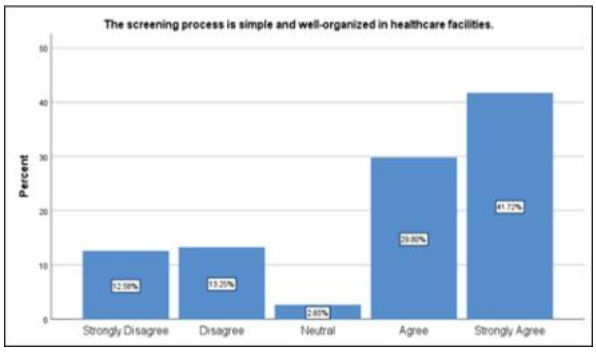


Figure 4.11: Simple Procedure
(Source: IBM-SPSS)

41.72% strongly agree, and 29.80% agree, although 13.25% disagree and 12.58% strongly disagree, 2.65% neutrals.

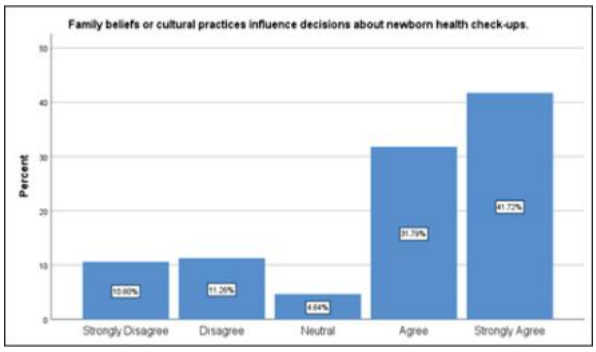


Figure 4.12: Cultural Practices
(Source: IBM-SPSS)

41.72% strongly agree, and 31.79% agree; nonetheless, 11.26% disagree, 10.60% strongly disagree, and 4.64% neutral.

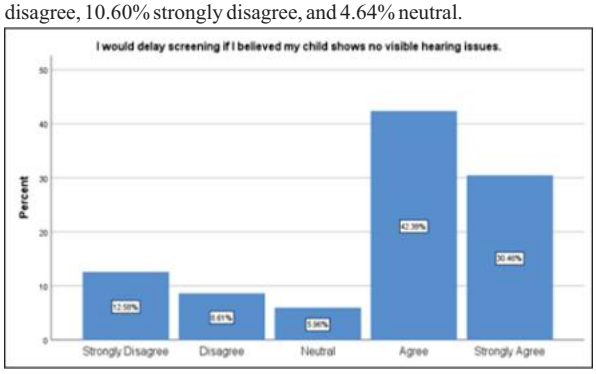


Figure 4.13: Delay Screening
(Source: IBM-SPSS)

30.46% strongly agree, 42.38% agree, while 8.61% disagree, 12.58% strongly disagree, and 5.96% neutral.

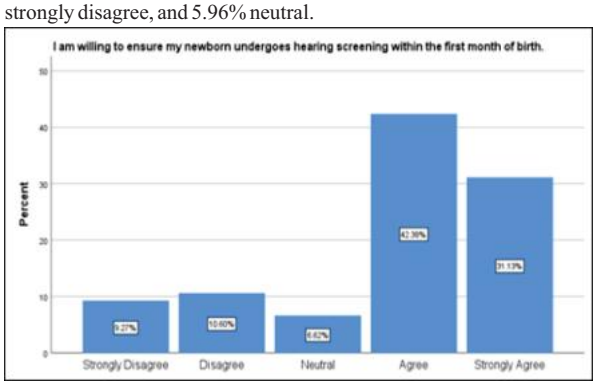


Figure 4.14: Ensure Hearing Screening
(Source: IBM-SPSS)

31.13% strongly agree, and 42.38% agree, however 10.60% disagree, and 9.27% strongly disagree, and 6.62% neutral.

DISCUSSION

The result shows that the majority of the parents who participated in the study believe neonatal hearing screening to be an important aspect in terms of a child's healthcare and well-being. However, there is a clear distinction in the overarching belief where parents believe that neonatal hearing screening can be delayed on the occasion that the child shows no discernible symptom of hearing issues. As the decision is entirely up to the parents and their initiation regarding the child's well-being and screening procedure, doctors and clinical practitioners cannot force the procedure. As the results imply, parents believed that it is okay to delay neonatal hearing screening under such situations.

The delay and negligence have a potential chance of increasing the damage to the child in case the hearing issues are not timely discovered. There is a fair chance that the child can grow without understanding their hearing issues, resulting in permanent hearing loss. On the contrary, despite the majority of the participants claiming that neonatal hearing screening is affordable for them, a significant number still showed concern over the cost of the screening process. As family decisions and cultural indignations can influence the potential of a child's health checkup opportunity, parents must take the initiative to ensure their child's well-being beyond societal concerns and stigma.

Conclusion and Recommendations

In conclusion, the research has revealed that although parents are mostly aware of the neonatal hearing screening process, they have cultural restrictions regarding the initiation of the screening process early on, especially due to the stigma of disability among children. Sociocultural and economic factors often make parents consider delaying the neonatal screening procedure in situations where the child has not shown any clear signs of hearing problems. This can create a major problem for the child in the future, in case the hearing issues are not identified early on, and they do not learn to navigate their social surroundings using specific tools and methods meant for them. Early diagnosis can save a child from permanent damage while providing them with assistive tools and language therapies.

Recommendations

- Using assistive tools like hearing aids and cochlear implants, along with language therapy, can help children to hear and become used to their surroundings despite their disability or impairments. Moreover, the children can get used to the assistive tools early on and become independent without external help from another person (Rahayu *et al.* 2024). Hence, children need to be introduced to assistive tools from an early age.

Increasing the awareness of parents requires active intervention from doctors and medical facilities. Awareness campaigns can increase parents' as well as the medical professionals' knowledge about neonatal hearing screening (Jamnagarwala, 2024). Furthermore, this can result in the problem being more prioritised and screening processes being more effective in the future.

REFERENCES

1. Aldè, M., Ambrosetti, U., Barozzi, S. and Aldè, S., 2025. The ongoing challenges of hearing loss: stigma, socio-cultural differences, and accessibility barriers. *Audiology research*, 15(3), p.46.
2. Athanasopoulos, M., Samara, P., Batsaouras, G. and Athanasopoulos, I., 2024. Making a difference from day one: The urgent need for universal neonatal hearing screening. *Children*, 11(12), p.1479.
3. Baldwin, J.R., Pingault, J.B., Schoeler, T., Sallis, H.M. and Munafò, M.R., 2022. Protecting against researcher bias in secondary data analysis: challenges and potential solutions. *European journal of epidemiology*, 37(1), pp.1-10.
4. Jamnagarwala Miss, K.S., 2024. Knowledge and attitude about New Born Hearing Screening among Gynaecologists: pre and post awareness session analysis. *Journal of Early Hearing Detection and Intervention*, 9(2), pp.51-55.
5. Nicholson, N., Rhoades, E.A. and Glade, R.E., 2022. Analysis of health disparities in the screening and diagnosis of hearing loss: early hearing detection and intervention hearing screening follow-up survey. *American Journal of Audiology*, 31(3), pp.764-788.
6. Rahayu, N.I., Muktiarni, M. and Hidayat, Y., 2024. An application of statistical testing: A guide to basic parametric statistics in educational research using SPSS. *ASEAN Journal of Science and Engineering*, 4(3), pp.569-582.
7. Rajanbabu, K., Joshi, D., Ramkumar, V., Kuper, H. and Vaidyanath, R., 2024. Early hearing detection and intervention programmes for neonates, infants and children in non-Asian low-income and middle-income countries: A systematic review. *BMJ paediatrics open*, 8(1), p.e002794.
8. Sharma, R., Gu, Y., Sinha, K., Ching, T.Y., Marnane, V., Gold, L., Wake, M., Wang, J. and Parkinson, B., 2022. An economic evaluation of Australia's Newborn hearing

screening program: A within-study cost-effectiveness analysis. *Ear and hearing,* 43(3), pp.972-983.
9. Verma, R.R., Konkimalla, A., Thakar, A., Sikka, K., Singh, A.C. and Khanna, T., 2021. Prevalence of hearing loss in India. *National Medical Journal of India*, 34(4).
10. Yan, A.F., Chen, Z., Wang, Y., Campbell, J.A., Xue, Q.L., Williams, M.Y., Weinhardt, L.S. and Egede, L.E., 2022. Effectiveness of social needs screening and interventions in clinical settings on utilization, cost, and clinical outcomes: a systematic review. *Health equity,* 6(1), pp.heq-2022.