Original Article

Audiology and Hearing Health in Islamabad and Rawalpindi: Awareness Perspective

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Audiology is a healthcare profession. It is dedicated to hearing with a distinctive clinical role of assessing hearing abilities and addressing impairments arising from hearing disorders [1]. Audiologists are healthcare providers who perform assessment, diagnosis and intervention related to hearing and balance issues [2]. Over and above the clinical aspects, the field also encompasses the crucial elements of hearing loss prevention, as well as promoting hearing health [3]. The aim is early identification of potential hearing problems, addressing existing issues, and improving overall communication abilities and quality of life for those affected by hearing-related conditions. Furthermore, audiologists assess individuals' requirements for hearing devices, and are responsible for evaluating, fitting, and dispensing hearing aids to those who require them. They play a crucial role in improving the hearing ability and overall communication capacity of individuals who experience hearing loss. A significant number of audiologists also perform assessments to measure balance function, and provide treatment for individuals experiencing balance dysfunction. This additional area of expertise allows audiologists to offer comprehensive care to individuals with hearing and balance-related conditions, and to address any issues that may impact their overall quality of life [4]. In developing regions, the prevalence of all causes of hearing loss (HL) is significantly higher compared to developed regions.

INTRODUCTION

Audiology is a healthcare profession. It is dedicated to hearing with a distinctive clinical role of assessing hearing abilities and addressing impairments arising from hearing disorders [1]. Audiologists are healthcare providers who perform assessment, diagnosis and intervention related to hearing and balance issues [2]. Over and above the clinical aspects, the field also encompasses the crucial elements of hearing loss prevention, as well as promoting hearing health [3]. The aim is early identification of potential hearing problems, addressing existing issues, and improving overall communication abilities and quality of life for those affected by hearing-related conditions. Furthermore, audiologists assess individuals' requirements for hearing devices, and are responsible for evaluating, fitting, and dispensing hearing aids to those who require them. They play a crucial role in improving the hearing ability and overall communication capacity of individuals who experience hearing loss. A significant number of audiologists also perform assessments to measure balance function, and provide treatment for individuals experiencing balance dysfunction. This additional area of expertise allows audiologists to offer comprehensive care to individuals with hearing and balance-related conditions, and to address any issues that may impact their overall quality of life [4]. In developing regions, the prevalence of all causes of hearing loss (HL) is significantly higher compared to developed regions.
developing countries contributes increasing prevalence of infections. These include infections like syphilis and rubella, birth-related issues like low weight, asphyxia; and increased bilirubin in newborns. These factors are closely associated with an increased risk of hearing loss in infants. Moreover, in economically disadvantaged nations, congenital hearing loss is significantly influenced by the administration of ototoxic pharmaceuticals (such as aminoglycoside drugs, antimalarial like quinine, some diuretic drugs) during the perinatal period, as well as limited access to maternal vaccination and understanding. Moreover, in underdeveloped nations, the incidence of HL (>40dB) on both sides amounts to 6/1000 births per year, compared to 2–4/1000 births in developed countries [5]. The regions of Asia, South Asia, Pacific, and Sub-Saharan are the most afflicted by HL in the globe, with a prevalence rate about four times that of high-income countries (WHO, 2018). Studies on pediatric hearing loss in Pakistan have been conducted in which the results concluded that HL can affect psychosocial and academic issues because of language barriers[6]. Human communication heavily relies on the sense of hearing, making it one of the fundamental senses for effective communication. Any form of hearing loss, whether it occurs early or later in life, can hinder the ability to communicate effectively and have considerable impact on the overall well-being and life satisfaction of an individual [7]. HL is an escalating global health issue which is of universal significance with 466 million individuals worldwide suffering HL which can result in issues including cognitive, psychological etc. Hence, addressing HL is essential not only for individuals but also for society, since it is also linked to impact on economy with raised costs of health care, reduced productivity and quality of life [8]. When hearing health services are not easily accessible to the public, people may not be aware of the importance of regular hearing check-ups or the potential risk of hearing loss. This lack of awareness can lead to delays in seeking treatment for hearing problems and may result in irreversible damage to hearing abilities. It is necessary to direct attention on awareness of audiology in order to prevent ear and hearing issues. Hearing and hearing health measures have a significant impact on ensuring that people in impoverished nations do not face the risk of permanent hearing loss, which is an irreversible pattern. The level of understanding among the general population regarding hearing impairment and maintaining healthy hearing may be harmed by a lack of audiological and Hearing care services. Audiology being a new profession in Pakistan [9], there is little data on public awareness of audiologists and their services in Pakistan, particularly among educated people. The educated population’s awareness is of much concern as they are the source of knowledge providers to the mass population of people who are uneducated with low literacy in Pakistan. The aim of this study was to assess the effect of public awareness on audiology and hearing health in Islamabad and Rawalpindi.

**METHODS**

This cross-sectional study was conducted over 5 months from 1st Feb, 2023 to 30th June, 2023. It was conducted at Shifa International Hospital (SIH), Islamabad, Pakistan following ethical clearance of research from Institutional Review Board (IRB) and Ethics Committee, of the hospital (Reference No# 0371-22; Dated 4th Jan, 2023). The study recruited a sample of n=377 individuals from Islamabad and Rawalpindi utilizing convenient sampling, after calculating a sample of 377 utilizing Rao soft with a (95%) confidence interval and (5%) error margin. The sample included individuals of both genders, aged 20-50, encompassing professionals such as businessmen, IT professionals, lawyers, engineers, accountants, and call center employees. Notably, the sample excluded specific groups, including otorhinolaryngologists, audiologists, individuals with hearing aids/cochlear implants, attendees of hearing conservation programs or ear disease management training, and parents of hearing-impaired children. A questionnaire developed by Joubert et al., to measure the knowledge and awareness regarding the field of audiology, hearing, HL, ear care and hygiene was used for data collection [10]. Tool has 05 sections including sections for demographics, knowledge and awareness regarding field of audiology, hearing, HL and ear care. Data were collected through online and in-person surveys to assess the level of awareness among individuals regarding audiology, hearing, and hearing health. All participants were provided with detailed information about the study and assured of confidentiality, and participants who furnished written consent were included. Data were entered and analyzed using SPSS version 26.0. Results were presented in terms of percentage and frequency.

**RESULTS**

A sample of 377 participants having mean age of 29.59 ± 8.074 revealed a predominantly female population of 231 (61.3%) with majority being undergraduates 242 (64.2%) and almost equal number of participants being students 150 (39.8%) and working in offices 149 (39.5%) (Figure 1).
Regarding knowledge of the profession of audiology, the majority 350 (92.8%) never visited an audiologist and most 219 (58.1%) heard about an audiologist by word of mouth. In connection with the knowledge of hearing and hearing loss majority 172 (45.6%) responded that it was of great importance to get hearing tested but most 233 (61.8%) were of the opinion that hearing of adults can be tested. Majority 130 (34.2%) were of the opinion that ear infection causes hearing difficulties followed by noise 125 (33.2%). When asked where would they go for help regarding hearing problem most 158 (41.9%) said they would go to an ENT doctor while 151 (40.1%) said they would go to an audiologist and most 185 (49.1%) preferred to go to hospital for hearing test. When asked if an ear infection could result in HL most 179 (47.5%) responded with yes while 151 (40.1%) were not sure. When asked about frequency of ear infection majority 217 (57.6%) responded hardly ever, majority 127 (33.7%) reported that they frequently clean their ears, and most 285 (75.6%) use cotton buds for cleaning and 220 (58.4%) use cotton bud when they have an itch. Most 270 (71.6%) thought music and noise could affect hearing. 318 (84.4%) opined that very loud noise could affect hearing. Most 170 (45.1%) thought that music in taxi, listening to MP3 and mobile phone could damage hearing (Table 1).
In this study, 377 participants from Rawalpindi and Islamabad were assessed for their knowledge of the audiology profession. Only (7.2%) know audiologists, while the majority of them were unaware of this field. Only (40.1%) demonstrated awareness, indicating a significant lack of awareness among the local population. Among those aware, (58.1%) learned through word-of-mouth, while (22.5%) were informed by other healthcare workers. In two different studies conducted by Joubert et al., the level of awareness regarding the role of audiologists in conducting hearing tests and assisting with ear problems was investigated among participants. The findings indicated that only a minority, specifically (14%) of the participants, revealed knowledge about the involvement of audiologists in these areas of healthcare. They recommended that hearing healthcare professionals and associations to raise awareness of the public [10, 11]. In contrast in current study, an overwhelming majority (84.4%) agreed that very high-intensity loud noise can damage your hearing.

<table>
<thead>
<tr>
<th>Do you think excessive loud noise can damage your hearing?</th>
<th>Yes</th>
<th>No</th>
<th>Maybe</th>
<th>I Don’t Know</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>318(84.4)</td>
<td>8(2.1)</td>
<td>42(11.1)</td>
<td>9(2.4)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Which of the following do you think can damage your hearing?</th>
<th>Music In Taxi</th>
<th>Listening to Mp3 Player</th>
<th>Listening to Cell Phone</th>
<th>All of the Above</th>
<th>None of the Above</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>7(1.9)</td>
<td>111(29.4)</td>
<td>48(12.7)</td>
<td>170(45.1)</td>
<td>37(9.8)</td>
</tr>
</tbody>
</table>

In contrast, a small percentage of the participants, specifically (7.6%), reported having visited an audiologist themselves. This implies that only a minority of the participants had personally sought out the expertise and services of audiologists [13]. This is in compliance to current study in which majority 350 (92.8%) of the participants never visited an audiologist. In a study by Emanuel et al., involving students revealed (70%) had knowledge of what audiologists do and the profession and (30%) learned about this profession from friends or family. This suggests that a significant portion of the participants had at least a basic understanding or awareness of the profession [14]. In current study 219 (58.1%) learned about an audiologist by word of mouth. In current study, the awareness regarding hearing assessments and caring for our ears revealed that people in Pakistan had minimal knowledge. This knowledge and awareness gap can be justified by the fact that the field of Audiology came to Pakistan much later than in other countries and therefore it took more time for work to be done in this domain and for more people to become knowledgeable about it. Hence systematic training of professionals to enhance the knowledge and awareness is required [15]. In spite of the fact that self-cleaning of ears was dangerous requiring awareness of masses [16], in the present study, the knowledge of ear hygiene revealed that (33.7%) of participants reported cleaning their ears frequently. When it came to the preferred cleaning tool for their ears, most participants (75.6%) mentioned using cotton buds. Other tools mentioned included wet cloths (11.9%), pen or pencils (4.8%), and matchsticks (4.2%). Similarly, in another study by Khan et al., reported that 98% participants were involved in self-cleaning and (75%) of those maintained that it was of benefit and the commonly (79.6%) used tool being cotton buds with (2.5%) suffering injuries [16]. In a Saudi study conducted by Alkishi et al.,, study revealed (27.3%) participants reported cleaning their ears once a week, (18.7%) performed daily cleaning, and (14.7%) cleaned their ears more than once a week. The primary reasons cited for self-ear cleaning were earwax (65.8%), dirt (45.8%), and itchiness (39.6%). When it came to the methods used for self-cleaning, the most common ones mentioned were cotton buds (65.2%), towels (45.3%), and using their fingers (28.9%) [17]. Similarly, in a Nigerian study by Gadanya et al., (76.3%) participants reported using cotton bud. Moreover, for many individuals, the frequency of cotton bud use was once daily, indicating a regular practice of cleaning their ears. It was observed that both ears were frequently cleaned by the participants who used cotton buds [18]. However, ear should best be cleaned by trained personnel, hence training to improve education of healthcare personnel is essential [18]. In current study an overwhelming majority (84.4%) agreed that very high-intensity
noise can affect hearing. When asked to indicate the type of noise in their area which can affect hearing. The majority of participants (45.1%) responded with "all of the above," followed by "listening an mp3" (29.4%) and "listening a mobile phone" (12.7%). Similarly, in a Swiss study by Diviani et al., respondents on average answered correctly to more than two out of three knowledge question. A significant majority of participants (95.4%) were aware that listening using earphones at high intensity can affect their hearing. Approximately three of four participants had knowledge that long duration exposure to sounds >85 dB can permanently affect ear (75.8%) and that the duration of sound exposure affects the extent of damage it can cause (72.2%) [19]. Also Joubert et al., also investigated excessive noise exposure. In their study, (69%) of participants agreed that excessively loud noise could cause hearing damage. However, regarding the type of noise participants reported that to listen loud music in taxi or MP3 was the main source of damage [11]. Crandell et al., in their study reported that significant majority of respondents (63%) accurately identified the inner ear as the most vulnerable to excessive noise. Furthermore, a high percentage of young adults (85%) were aware that there is no cure for hearing loss, this indicates that a substantial portion of the participants had a good understanding of the anatomical impact of loud sounds on the auditory system. Additionally, the study observed that nearly all participants (95%) recognized that excessive noise can cause damage to hearing at any age. This indicates a widespread understanding among the participants that exposure to loud sounds can have detrimental effects on hearing, regardless of one’s age [20].

**CONCLUSIONS**

Lack of awareness regarding audiology as a profession, leading to a limited number of individuals seeking audiological services. While there is a general understanding of the importance of hearing testing and recognition of the causes of hearing loss, there is room for improvement in raising awareness about the specialized role of audiologists in addressing hearing-related issues. Additionally, efforts should be made to educate individuals, particularly teenagers and students, about the risks of excessive noise exposure and encourage safer listening practices to prevent hearing damage.

**Authors Contribution**

Conceptualization: MAS
Methodology: GS, MAS, KZ
Formal analysis: LQ
Writing-review and editing: AP

All authors have read and agreed to the published version of the manuscript

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**REFERENCES**


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[14] Emanuel DC, Donai JJ, Araj CF. The awareness of the profession of audiology among entering college students.


