Journal of Pharmaceutical Research International

34(37B): 1-7, 2022; Article no.JPRI.85675
ISSN: 2456-9119
(Past name: British Journal of Pharmaceutical Research, Past ISSN: 2231-2919, NLM ID: 101631759)

Expertise and Insights of Dentists Perceiving Sign Language

Rehmatullah [a#], Maham Shah [a#], Khalida Naz [b#], Shanti Chouhan [c*†], Shuja Aslam [d#] and Asad Tahir [e¥]

[a] Community Dentistry, Liaquat University of Medical and Health Sciences, Pakistan.
[b] Faculty, Community Medicine, Liaquat University of Medical and Health Sciences, Pakistan.
[c] Aga Khan University, Pakistan.
[d] Operative Dentistry, Isra Dental Collage, Isra University Hyderabad, Pakistan.
[e] District Focal Person, Sanghar Government of Sindh, Pakistan.

Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

Article Information

DOI: 10.9734/JPRI/2022/v34i37B36202

Open Peer Review History:
This journal follows the Advanced Open Peer Review policy. Identity of the Reviewers, Editor(s) and additional Reviewers, peer review comments, different versions of the manuscript, comments of the editors, etc are available here: https://www.sdiarticle5.com/review-history/85675

Original Research Article

Received 10 March 2022
Accepted 18 April 2022
Published 11 May 2022

ABSTRACT

Dental consideration to the weak populace is a forthcoming issue in well-being approaches because of the absence of proper and particular techniques. Patients with tangible deficiencies pose the problem to experts in anticipation of oral sicknesses generally because of correspondence issues.

Keywords: Dentists; sign language; knowledge; sensory defacement.

1. INTRODUCTION

Communication through signing is an overall term that alludes to any gestural or visual language that utilizes explicit shapes and use of fingers, hands, arms, eyes and direction of head and body, looking to communicate the speakers' contemplations simultaneously [1,2]. There are different sign languages, available for different areas for deaf and for those people who are hard of hearing and it is used by many hearing people as well, like British sign language, Spanish sign language, American sign language (ASL) and Pakistani sign language (PSL). The Sign language isn't all-inclusive despite the fact that it is accessible in excess of thirty nations [3-5].

[#] *Senior Registrar Operative;*
[¥] *Consultant Operative Dentistry and Endodontics;*
[†] *Research Associate*
**Corresponding author: E-mail: Shantichohan88@gmail.com;*

Pakistani sign language blends with Urdu mainly and interacts with other regional languages like Sindhi, Pushto, Punjabi, and Balochi. The language and punctuation of the sentence can be different to support execution and familiarity with talking with the deaf and hard o hearing patients. Individuals with prelingual loss of hearing frequently distinguish themselves with hard of hearing local area [6,7].

Individuals with hard hearing utilize communication through signing as their favourite technique for correspondence and communication to others. This safeguards them against adverse health outcomes [8]. According to linguists both spoken and sign communication is considered to be the natural language which means that it evolved organically and over time while body language is non-phonetic communication. Correspondence among dental specialists and patients through this non-phonetic communication is of most extreme significance, especially when intended to support the deaf patients [9,10].

Understanding sign language is gaining more importance now a day especially in the situation as revealed by World Health Organization that 5% of every country's population has some sort of hearing impairment. Currently, the total population of Pakistan approximates to 200.81 million, meaning thereby that there are approximately 10 million hearing-impaired citizens in Pakistan. [1] According to the World Health Organization, one in every 10 people has a disability, and more than two-thirds of them do not receive any type of oral dental care; moreover literature finds dearth of skilled dentists regarding sign language in Pakistan.[2] Pakistan's demographic distribution is surrounded by a remarkable number of deaf people. Approximately 3.3 million Pakistani people are afflicted by some kind of physical disorder, comprising of 0.24 million (specifically belonging to the age group from 5 to 29 years) are hearing-impaired. This contributes to almost 7.4% of an overall handicapped community thereby emphasizing the significance of using Pakistani Sign Language.[3]

A few dental specialists unintentionally disregard the significance of passing a message on to their patients. A few examinations have led to gauging the nature of correspondence at various phases of dental treatment. They have to inquire about certain parts of the procedure, but due to the full engagement of the dentist, they are not able to ask questions in a way that fulfils the matters of sign language [11,12].

Studies are been conducted on the development of the different software for the better services to the deaf and hard of hearing community such as the recently developed App Odontoseñas for communication with dental patients. in which the overall usability of the software scored 96 points over 100. The overall satisfaction of deaf people without the software was 21, and with the software it was 29 over 30.[4]

It is important to understand that, communication is a skill that has developed throughout the course of a very long time as a method for conveying necessary information efficiently and if it is flawed information will not be delivered properly [13-15].

The aim of this article is to assess the knowledge of dentists regarding sign language because deformities are increasing day by day so it's very important to check whether our dentists are aware of sign language.

1.1 Objectives

1. To assess the knowledge of dentists regarding sign language.
2. To determine the problems faced by dentists in treating patients by using sign language

2. METHODOLOGY

Study setting: Community settings in Pakistan where dental specialists were practising.

Study Design: Cross-sectional study.

Duration of study: 1 month i.e. from 1st January 2022 to 1st Feberuary2022.

[1] *Sign Language Accessibility for the Deaf in Pakistan - YES Programs*

[2] *Leal Rocha L, Vieira de Lima Saintrain M, Pimentel Gomes Fernandes Vieira-Meyer A. Access to dental public services by disabled persons. BMC oral health. 2015 Dec;15(1):1-9.*

[3] *Dewani A, Bhatti S, Memon MA, Arif WA, Arain Q, Zehra SB. Sign Language e-Learning system for the hearing-impaired community of Pakistan. International Journal of Information Technology. 2018 Jun;10(2):225-32.*

[4] *Campos V, Cartes-Velásquez R, Bancalari C. Development of an app for the dental care of Deaf people: Odontoseñas. Universal Access in the Information Society. 2020 Jun;19(2):451-9.*

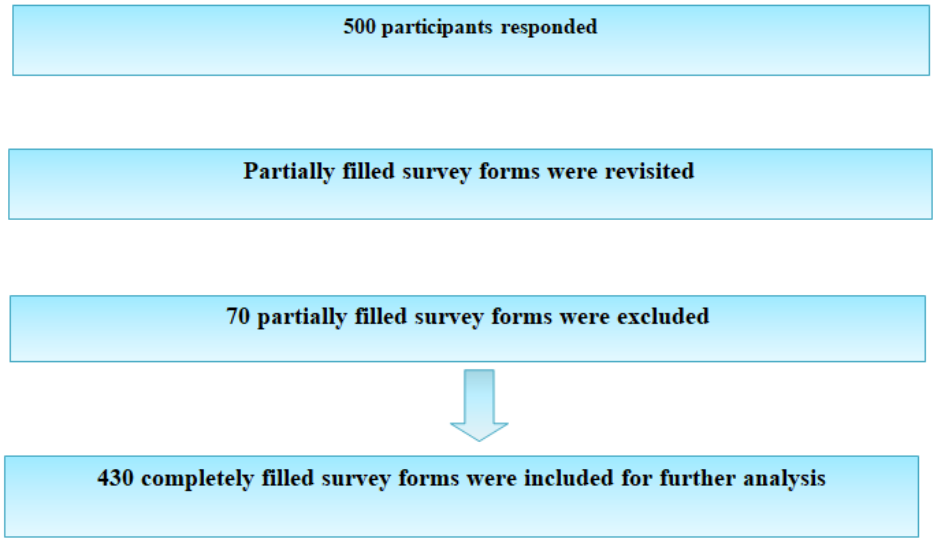

Fig. 1. Flow chart showing recruitment of study participants.

Study population, sample size & sampling technique: Four hundred thirty dental professionals were recruited by convenience sampling.

Data collection method, variables & analysis: The dental specialists were approached to collect the relevent data. The gathered data was measurably investigated with the IBM SPSS version 23 for windows. Besides computing frequencies & percentages, the associations among variables were pursued by employing the Pearson Chi-Square test to identify contrasts accordingly for various factors with the degree of significance set at p-value < 0.05. Apart from socio-demographic variables, dentists' level of proficiency & approach with regard to sign language was documented on a pre-validated questionnaire. Chron Bach's reliability index of the data collection tool was computed as 0.765. Concentration on the populace incorporates specialists, consultants, general dentists who work in Pakistan between the ages of 25-50 years and those who did not consent, residence officers and college understudies were precluded from the study.

3. RESULTS

Five hundred dental specialists were contacted to get the desired sample subjects i.e. 430. The response rate was 86%.

The majority of the participants (84.4%) were familiar with the sign language.

Table 1. Demographic profile of study participants

Profile	Attributes	Frequencies (%)
Age	25-30 years	175(40.7%)
	31-36 years	115(26.7%)
	37-42 years	91(21.2%)
	43-47 years	28(6.5%)
	48-50 years	21(4.9%)
Gender	Males	263 (61.2%)
	Females	167 (38.8%)
Designation	General Dentists	161 (37.4%)
	Consultants/Specialists	269 (62.6%)
Education Level	Graduate	161 (37.4%)
	FCPS	125 (29.1%)
	PhD	20 (4.7%)
	Masters	124 (28.8%)

Table 2. Association between knowledge regarding sign language & problems faced by dentists in using sign language

Items	Questions	Responses(%)	p-value
1	Are you familiar with Sign language?	Yes=363 (84.4%) No=67 (15.6%)	**≤0**.000
2	How significant correspondence between dental specialists and patient is?	Very important=347(80.7%) Not important=30 (7%) No idea=53 (12.3%)	**≤0**.000
3	Have you gained gesture-based communications through your dentistry career?	Yes=131 (30.5%) No=144 (33.5%) Sometimes=155 (36%)	**≤0**.001
4	How do you feel when your patient needs to interface throughout the dental process ?	Hand sign=100(23.3%) Eyes movement=182(42.3%) Facial expression=148(34.4%)	**≤0**.001
5	How frequently do you utilize communication via gestures with your patients?	Always=166(38.6%) Never=97(22.6%) Sometimes=167(38.8%)	**≤0**.001
6	Does your patient apply gesture-based communication during treatment?	Always=158(36.7%) Never=61(14.2%) Sometimes=211(49.1%)	**≤0**.001
7	Are you intrigued to learn gesture-based communication courses?	Yes=359(83.5%) No=71(16.5%)	**≤0**.002
8	Have you at any point treated hard of hearing patients?	Yes=140(32.6%) No=119(27.7%) Sometimes=171(39.8%)	**≤0**.000

4. DISCUSSION

Current study was conducted with the objective to assess the knowledge of dental specialists regarding sign language. Moreover, the hard of hearing is characterized as those people who utilize sign language as their essential method of correspondence [16]. For quite a long time, disarray has existed over the distinctions in the jobs, and a gesture-based communication collaborator/mediator, who is responsible for assisting hard of hearing or almost deaf people with getting what is being said in a variety of circumstances [17].

Numerous studies have revealed that individuals suffering from impaired hearing unfortunately have impaired oral cleanliness, a high predominance of caries, and neglected needs for treatment. Patients with hearing impairment don't have sufficient knowledge about oral well-being and care, which could disable their oral cleanliness rehearses [18].

As indicated by Khaled et al, in a research conducted at King Faisal University in Saudi Arabia, 92% of the hearing debilitated populace had no attention to oral and dental cleanliness practice, 79% didn't have any idea how to clean their teeth, and 83% never got any guidelines in regards to their oral well-being" [19].

Moreover, a study conducted at "Al AmalAcademy for Deaf Women in the Eastern Province of Saudi Arabia revealed that 65% of the hard of hearing and hearing debilitated subjects showed trouble in communication during treatment, most of the subjects revealed complete dependence on a caretaker" [20].

Results of current study disclose that dental professionals are well sentient with sign language and have a remarkable acquaintance ($p \leq 0.001$). Medical professionals at times find it too difficult to verbalize with their patients & the current research also reveals that dental specialists are engrossed to ascertain gesticulation rested commands.

Due to the correspondence related obstacles , the majority of dental patients with hard of hearing problems don't visit a dental specialist

unless they have an urgency. As indicated by "WHO there are 59 million hard of hearing, and 360 million people with hearing misfortune, on the planet" [21].

As hearing loss affects the over all level of understanding regarding well being, this exerts its negative impact on the improvement of medical condition the patient is suffering from. This influences an assortment of well-being related results, particularly related to medical assessment, screening, initiation & continuation of therapy as well as rehabilitation.

Oral health care professionals ought to appraise to bridge communication lacunae and existing oral health disparities due to several correspondence hindrances. This might comprise of preparing for how to really convey a message, with hard of hearing patients, laying out associations with proficient mediators aiming to impart information on better dental hygiene procedures.

The absence of accessibility of specific oral health workforce for hard of hearing patients in essential consideration is because of nonattendance of preparing in educational plans and not sufficiently readiness to really manage these patients [22-25].

5. CONCLUSION

Current study revealed that 32.6% of dental specialists have the experience of treating hard of hearing patients, where they have perceived the need of the patients for the sign language communication through different means. This is also observed that the majority of dental specialists i.e. 83.6% (p-value 0.002) are motivated to learn these skills. As of 80% of dental specialists feel the significance of the communication between dental specialists and deaf and hard of hearing patients. Educating patients about the utilization of gesture-based communication can help them to go through the dental procedures in a pleasant way. The current study showed the insights of the dental specialists regarding sign language for oral health soundness of hard of hearing patients. To comprehend the grounds of oral health deficits among these people, more research using established proportions of dental health is required, as per the review. The current review is fundamentally an exploratory study and henceforth there is a need for more studies in this area.

6. RECOMMENDATIONS

- Use of guiding videos for the deaf and hard of hearing patients can be helpful.
- Small courses and training of the dentists to develop the communication skills with such patients will be helpful.
- Development of software specified for dental communication and understanding for deaf and hard of hearing patients can help in improvising better dental practice.
- Awareness sessions and seminars in the rehabilitation centres regarding oral hygiene can provide better results.

CONSENT

As per international standard or university standard, patients' written consent has been collected and preserved by the author(s).

ETHICAL APPROVAL

It is not applicable.

DISCLAIMER

The authors hereby declare absolutely no conflict of interest. Moreover, the research was not funded by any agency.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. Mahmoud HN, Mahmoud AN. Knowledge and attitudes of jordanian dentists toward speech language pathology. Journal of Language Teaching and Research. 2019 Nov 1;10(6):1298-306.
2. Fageeh HN, Mansoor MA. The effectiveness of oral hygiene instructions in sign language among hearing impaired adults in Saudi Arabia. Special Care in Dentistry. 2020 Jan;40(1):41-8.
3. Al-Jaafar L, Al-Shehri M, Al-Shehri A, Al-Aabbad Z, AlZahrani J, Ansari SH. Sign language use and its knowledge among the dental students and patients; A Sross-Sectional Study Done in Riyadh Elm University.
4. Jones T, Cumberbatch K. Sign language in dental education—a new nexus. European

Journal of Dental Education. 2018 Aug;22(3):143-50.
5. Camposa V, Cartes-Velásquezb R, McKeec M. Oral health and dental care in deaf and hard of hearing population: A scoping review. Oral Health Prev Dent. 2020 May 1;18:417-26.
6. Mustafa M, Asiri FY, AlGhannam S, AlQarni IA, AlAteeg MA, Anil S. Extent of awareness regarding oral health and dental treatment needs among individuals with hearing and speech impairments in Saudi Arabia. Journal of International Society of Preventive & Community Dentistry. 2018 Jan;8(1):70.
7. Ávila-Curiel BX, Solórzano-Mata CJ, Avendaño-Martínez JA, Luna-Vásquez B, Torres-Rosas R. Playful educational intervention for improvement of oral health in children with hearing impairment. International Journal of Clinical Pediatric Dentistry. 2019 Nov;12(6):491.
8. Moin M, Saadat S, Rafique S, Maqsood A, Lal A, Ahmed N, Vohra F, Alam MK. Impact of oral health educational interventions on oral hygiene status of children with hearing loss: A randomized controlled trial. BioMed research international. 2021 Nov 17;2021.
9. Hashmi S, Mohanty VR, Balappanavar AY, Yadav V, Kapoor S, Rijhwani K. Effectiveness of dental health education on oral hygiene among hearing impaired adolescents in India: A randomized control trial. Special Care in Dentistry. 2019 May;39(3):274-80.
10. Ahmad MS, Shafie NE, Redhuan TM, Mokhtar IW. Referral pattern and treatment needs of patients managed at a Malaysian special care dentistry clinic. Journal of International Oral Health. 2019 Sep 1;11(5):299.
11. Baliga S, Deshpande MA, Thosar N, Rathi N, Bane S, Deulkar P. Comparison of impact of oral hygiene instructions given via sign language and validated customized oral health education skit video on oral hygiene status of children with hearing impairment. Journal of Indian Society of Pedodontics and Preventive Dentistry. 2020 Jan 1;38(1):20.
12. Al-Rawi NH, Al Nuaimi AS, Sadiqi A, Azaiah E, Ezzeddine D, Ghunaim Q, Abbas Z. Occupational noise-induced hearing loss among dental professionals. Quintessence Int. 2019 Mar 1;50(3):245-50.
13. Campos V, Cartes-Velásquez R, Bancalari C. Development of an app for the dental care of Deaf people: Odontoseñas. Universal Access in the Information Society. 2020 Jun;19(2):451-9.
14. Tariq K, Imam HS, Parvez MA. Knowledge, attitude and practices before and after dental health education among hearing and speech impaired children. Annals of Punjab Medical College. 2017 Aug 26;11(3):222-6.
15. Campos V, Cartes-Velásquez R, Luengo L. Chilean health professionals' attitudes towards deafness: A cross-sectional study. Pesquisa Brasileira em Odontopediatria e Clínica Integrada. 2020 Jul 20;20.
16. CAMPOS VA, CARTES-VELÁSQUEZ R. Developing competencies for the dental care of people with sensory disabilities: A pilot inclusive approach. Cumhuriyet Dental Journal. 2020;23(2):107-15.
17. Campos V, Luengo L, Cartes-Velásquez R. Factor analysis of the cross-cultural adaptation of the multidimensional attitudes scale towards deaf persons in Chilean dental students. Brazilian Journal of Oral Sciences. 2021 Jun 17;20:e214270-.
18. Al-Omoush SA, Abdul-Baqi KJ, Zuriekat M, Alsoleihat F, Elmanaseer WR, Jamani KD. Assessment of occupational noise-related hearing impairment among dental health personnel. Journal of occupational health. 2020 Jan 20;62(1):e12093.
19. Khaled K, Faris Y. Basic practices of oral hygiene and awareness of oral and dental disease among deaf and dump population in Saudi Arabia. *Dentistry*. 2017; 7(Suppl):10.
20. Ramsey R, Greenough J, Breeze J. Noise-induced hearing loss in the military dental setting: A UK legislative perspective. BMJ Mil Health. 2020 Nov 1;166(E):e53-6.
21. Beal J, Trussell J, Walton D. Incoming deaf college students' sign language skills: Self-awareness and Intervention. Journal of Language, Identity & Education. 2021 Mar 17;1-4.
22. Vyas S, Nagarajappa S, Dasar PL, Mishra P. Impact of comprehendible learning modes on oral health among visually impaired adults. Special Care in Dentistry. 2018 Sep;38(5):271-80.

23. Modawey SH. Awareness and usage of sign language among doctors in main Khartoum Hospitals (Ibrahim Malik, Bahri, Omdurman) October 2017. Commun Disord Deaf Stud Hearing Aids. 2018; 6(181):2.
24. Madiyal A, Babu SG, Madi M, Bhat S, Hegde P, Shetty A. Occupational noise induced hearing loss among Dental Professionals: A Review. Pacific Journal of Medical Sciences. 2018:44.
25. Dewani A, Bhatti S, Memon MA, Arif WA, Arain Q, Zehra SB. Sign language e-Learning system for hearing-impaired community of Pakistan. International Journal of Information Technology. 2018 Jun;10(2):225-32.

Peer-review history:
The peer review history for this paper can be accessed here:
https://www.sdiarticle5.com/review-history/85675