



# Attitude of Students and Audiologist Professionals towards Patient-Centered Care in Audiology

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## Abstract

**Background:** In audiology, the service model has always been practitioner-centric or techno-centric. However, the model has evolved into client-centric over the years. Patient centeredness is a growing trend in healthcare as it improves the outcomes of the intervention and patient satisfaction. This study was conducted with the aim of determining the preferences of undergraduates, postgraduates, and working professionals toward a patient-centered framework for the service delivery model.

**Materials & methods:** This study employed a survey design where the data was collected using an online questionnaire (patient–practitioner orientation scale). A total of 60 individuals participated in the survey which included undergraduate students, postgraduate students, and working professionals.

**Results:** The analysis of the findings revealed that there was no significant difference in the attitude toward preferences between postgraduate students and working professionals. However, a significant difference was found between undergraduate students and working professionals and undergraduate students and postgraduate students.

**Conclusions:** This study concludes that the postgraduate students and working professionals are more patient-centric than the undergraduate students. However, further studies are needed to compare the attitudes of working professionals with varying years of work experience.

## Keywords

- ▶ service delivery model
- ▶ audiologist's attitude
- ▶ audiological rehabilitation & patient practitioner orientation scale (PPOS)

## Introduction

Hearing loss is the fourth leading cause of disability globally, according to World Health Organization, 2015. In India, hearing loss has been ranked the second most common cause of disability, as per the National Sample Survey, 2002.<sup>1</sup> It has been estimated that number of individuals with hearing loss will approximately double by the year 2050.<sup>2</sup> As the number is going to increase, the individuals who require assessment and rehabilitation are also on the

verge of increasing. In the present scenario, over 5% of the world's population has hearing loss, yet only 17% seek treatment.<sup>3</sup> After receiving the hearing aid, the percentage of not wearing the hearing aid varies from 4<sup>4</sup> to 24%.<sup>5</sup>

Successful hearing aid usage and other forms of aural rehabilitation can depend on many factors. In the Indian scenario, rejection of hearing aids is reportedly influenced by attitude-related, awareness-related, device-related, and personal factors.<sup>6</sup> Literature suggests that the cosmetic appearance of the

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hearing aid and insufficient information provided by the audiologist are the most frequent causes of nonacceptance of hearing aids.<sup>7</sup> Others have reported that the attitude of an audiologist toward the patient's needs while dispensing hearing devices has an impact on the continuous usage of hearing aids.<sup>8</sup>

The role of the rehabilitation audiologist is not only to provide a hearing aid but also to provide a broad range of rehabilitation choices and allow the client to control the decision-making process.<sup>9</sup> It is crucial to uplift the client-clinician interaction<sup>10</sup> for aural rehabilitation. One way to do that is by changing the service delivery model. The term patient-centered care originated from the counseling literature of psychology.<sup>11</sup> Client-centered care involves the patient being an active participant in the rehabilitation process and includes a shared decision-making process.

This approach has been studied in various allied fields and the medical profession, and now, the model has also been extended to audiology. In audiology, the service model has always been practitioner-centric or techno-centric. However, over the last three decades, the model has evolving into client-centric,<sup>12,13</sup> and the literature has reported that it positively impacts patient satisfaction and health outcomes.<sup>12,13</sup> Literature shows that clients were more satisfied when the client-centered approach was followed to deliver audiological services.<sup>14</sup> Studies in many places show that audiologists choose a patient-centric approach over a techno-centric.<sup>15</sup> There is evidence that patient-centered care aligns with the scope of practice for audiological rehabilitation.<sup>10</sup> Clinician-centric models predominantly focus on pathology, disease, or impairment, while patient-centric models prioritize the individual with the condition.<sup>16</sup> In rehabilitation fields like audiology, the clinician engages in activities with the patient rather than performing actions on the patient. This approach necessitates interactive, facilitative, and horizontally communication with the patients.<sup>16</sup>

The choice of a service delivery model can impact the treatment outcomes, patient satisfaction, compliance, and efficacy. The adoption of right/appropriate service delivery model during the clinical services depends on various factors, including the clinician's attitude, the nature of the work setup, and the clinician's experience. Clinician attitudes often exhibit variations based on academic qualifications and the extent of exposure to patients. Though it has been documented in literature,<sup>17</sup> there is a notable absence of reports on this subject within the Indian context. Given the distinct work environment and cultural nuances in India compared with other countries, there exists a need to investigate how the inclination toward either clinician-centric or patient-centric approaches varies among undergraduates, postgraduates, and working professionals in the Indian healthcare scenario.

This study aims to determine the preferences toward a patient-centered framework for the service delivery model among undergraduates, postgraduates, and working professionals.

## Methods

A questionnaire-based survey design was employed in this study.

## Participants

A total of 81 participants took part in this study, including undergraduate students, postgraduate students, and working professionals within the age range of 18 to 27 years. Out of the 81 participants, 45 participants were males, and 36 were females. Among the collected responses, the majority of the participants were undergraduate students ( $n=31$ , 38.27%), followed by postgraduate students ( $n=26$ , 32.09%) and working professionals ( $n=24$ , 29.60%). The working professionals who participated in this study had work experience of minimum 1 to 2 years.

## Inclusion and Exclusion Criteria

Any responses obtained from students studying outside India and professionals working outside India were excluded in this study. For the undergraduates group only the responses from students studying in their last year of their course (3<sup>rd</sup> year) were considered. This is to ensure that the students have encountered patients in their clinical training for at least 2 years before commenting on the service delivery. The postgraduate group had responses from students who are in either in first or second year of their course. In working professional group, the responses were included only from professionals who had minimum of 2 years of experience in handling the patients in clinical services.

## Material

The patient practitioner orientation scale (PPOS) questionnaire was used to assess the attitude of undergraduates, postgraduates, and working professionals toward preferences of a patient-centric approach. The PPOS was initially developed to study physician preferences toward patient-centeredness.<sup>18</sup> However, a modified version of the PPOS has been used to study audiologists' preferences toward patient-centeredness.<sup>19</sup> The details regarding modification of PPOS questionnaire to study audiologists's preferences and its validation procedure are available in the literature.<sup>19</sup> The modified version of PPOS has been previously utilized to study the preferences of audiologists<sup>15,17</sup> and is also found to have acceptable internal consistency ( $\alpha=0.78$ ).<sup>19</sup> Thus, this study has considered this modified version of PPOS, so that the findings can be comparable. The questionnaire has a total of 18 items divided into two subscales, sharing and caring, where each subscale has nine items. Each question is in English language that is rated by an individual on a six-point rating scale from one to six, where "one" refers to "strongly disagree" and "six" refers to "strongly agree." The total score for each participant ranges from 18 to 108, where "18" indicates most patient-centered and "108" shows most clinician-centered.

## Procedure

The responses were collected using an online platform via Google Forms. The Google Form was divided into two sections. The first section contained demographic details, which included the relevant information to achieve this study's objectives, such as age, gender, educational qualification, participants presently pursuing education or working

professional, and years of work experience. The second section contained a PPOS questionnaire to obtain preferences toward client-centeredness. A brief summary of this study was included at the beginning of the form to inform participants about it. The Google Form was circulated via WhatsApp, email, and telegram, and the response poll was kept open for two months.

The obtained responses were tabulated in SPSS (IBM SPSS Statistics Version 20) for statistical analysis. The scores for all the questions were added across the three groups. Descriptive statistics were performed to determine the mean, median and standard deviation of scores obtained in different groups. Shapiro–Wilk test of normality was performed to check the distribution of data. Appropriate inferential statistics were also performed to examine whether there was any significant difference across the three groups in their preferences toward client-centeredness. The significance was determined by keeping an  $\alpha$  level of 0.05.

## Results

► **Table 1** represents the results of descriptive statistics for each group. The lower mean scores suggest more patient-centeredness, whereas the higher mean scores indicate clinician-centeredness. The data shows that the undergraduate students had maximum mean scores, whereas postgraduate students had minimum mean scores which indicate more patient-centeredness was observed in postgraduate students. Additionally, there is not much of a difference in the mean scores between postgraduate students and working professionals, indicating that working professionals also prioritized the needs of their patients (► **Table 1**).

Shapiro–Wilk tests of normality were performed to check the distribution of the data which revealed that data was significantly different from that of normal distribution with  $p$ -value less than 0.01. This led to the election of nonparametric tests. Kruskal–Wallis H and Mann–Whitney U tests

were done to check whether there is a significant difference across and between the groups.

Kruskal–Wallis test revealed rejection of the null hypothesis, which implied a significant difference ( $H(2) = 10.698$ ,  $p = 0.005$ ) across the groups. Further, Mann–Whitney U tests showed significant differences between the postgraduate and undergraduate students. A significant difference was also found between working professionals and undergraduate students; however, there was no significant difference between postgraduate students and working professionals. The test statistic and significance obtained for pairwise comparison by Mann–Whitney are mentioned in ► **Table 2**. ► **Table 3** represents the total mean scores for all the participants for each question and the total across groups for each question. It shows that, among the eighteen items assessed, undergraduate students scored higher on ten items than postgraduate students and working professionals. That is, for items 3, 4, 5, 8, 10, 11, 12, 14, 16 & 18, undergraduate students received less patient-centered responses than postgraduate students and working professionals. This indicates that undergraduate students were less patient-centered than postgraduate students and working professionals for more than half of the items.

## Discussion

This study aimed to determine the preferences of undergraduate students, postgraduate students, and working professionals toward the client-centered approach. A statistically significant difference was obtained between the postgraduates and undergraduates, indicating that postgraduate students are more client-centered than undergraduate students. The difference was again statistically significant between the working professionals and undergraduate students, leading to the belief that working professionals are more client-centered than undergraduate students. There was no statistically significant difference between the postgraduate students and working professionals, which could be due to fewer years of work experience for the professionals. A

**Table 1** Results of descriptive statistics of all the groups

Qualification	<i>n</i>	Mean	SD	Median	Minimum	Maximum
UG	31	70.9032	8.17457	71.0000	56.00	83.00
WP	24	63.6667	7.16068	65.5000	52.00	75.00
PG	26	66.2692	7.30237	66.5000	51.00	78.00
Total	81	67.2716	8.11174	68.0000	51.00	83.00

Abbreviations: PG, postgraduate; SD, standard deviation; UG, undergraduate; WP, working professional.

**Table 2** Mann–Whitney U test results for pairwise comparison between groups

Pair	U value	Z value	<i>p</i> -Value
PG–UG	260	–2.290	0.022
WP–UG	192	–3.061	0.002
PG–WP	362	0.973	0.330

Abbreviations: PG, postgraduate; UG, undergraduate; WP, working professional.

**Table 3** Mean scores of all the participants in each group for each question

PPOS items	Total	UG	PG	WP
1. The audiologist is the one who should decide what gets discussed during an appointment	4.604	4.41	4.45	4.96
2. Although healthcare is less personal these days, this is a small price to pay for audiological advances	4.320	4.32	3.87	4.73
3. The most important part of the standard audiological appointment is the hearing test	4.863	5	4.77	4.69
4. It is often best for clients if they do not have the full explanation of their audiological condition	2.419	3.09	2.16	1.84
5. Clients should rely on their audiologist's knowledge and not try to find out about their conditions on their own	3.469	3.83	3.37	3.11
6. When audiologists ask a lot of questions about a client's background, they are prying too much into personal matters	2.395	2.64	1.87	2.57
7. If audiologists are truly good at diagnosis and treatment, the way they relate to clients is not that important	2.197	2.12	2.25	2.23
8. Many clients continue asking questions even though they are not learning anything new	3.592	4.25	2.91	3.42
9. Clients should be treated as if they were partners with the audiologist, equal in power and status*	3.469	3.64	3.66	3.07
10. Clients generally want reassurance rather than information about their audiological condition	4.757	4.83	4.83	4.88
11. If an audiologist's primary tools are being open and warm, the audiologist will not have a lot of success	3	3.16	2.87	2.92
12. When clients disagree with their audiologist, this is a sign that the audiologist does not have the client's respect and trust	3.716	3.87	3.83	3.42
13. A management plan cannot succeed if it is in conflict with a client's lifestyle or values*	5.024	5	5.08	5
14. Most clients want to get in and out of the audiologist's office as quickly as possible	3.691	4.19	3.20	3.53
15. The client must always be aware that the audiologist is in charge	2.370	2.45	2.20	2.42
16. It is not that important to know a client's culture and background to treat the client's audiological condition	5.012	5.12	4.87	5
17. Humor is a major ingredient in the audiologist's management of the client*	3.617	4.03	2.83	3.84

Abbreviations: PG, postgraduate; PPOS, patient practitioner orientation scale; UG, undergraduate; WP, working professional; \*Reversely framed items which were reversely coded.

study has reported that individuals with more work experience were more patient-centered. Further, it was also noticed that the effect of work experience on PPOS scores was more for females than males.<sup>20</sup> However, this study did not check the effect of gender on PPOS scores; years of work experience for working professionals also varied only from one to two years.

In this study, when total scores for all the groups and scores for undergraduate students are compared, item 7 received the most patient-centeredness, similar to the results obtained by Laplante-Lévesque et al.<sup>19</sup> However, most patient-centeredness for postgraduate students and working professionals was received for item 4, similar to the results obtained by Manchaiah et al.<sup>15</sup> When the reverse-scored items are considered to determine the most patient-centeredness, item 13 has scores corresponding to the stron-

gest patient-centeredness. For item 13, all the groups received the most patient-centered response. The scores for item 13 are more patient-centered compared to item 4.

Item 16 received the least patient-centeredness among all the groups, which differs from the findings obtained in previous studies.<sup>17,19</sup> It has been reported that the sharing subscale shows development in scores toward patient-centeredness, but the caring subscale takes more time and work experience to reflect the difference in scores.<sup>17</sup> The difference in the scores could be due to working professionals having a working experience of 1 to 2 years and cultural expectations in India differ significantly from place to place. However, a study<sup>15</sup> reported less patient-centeredness for audiologists in India compared with Portugal and Iran.

Of 18 items, the undergraduate students scored more for the ten items than postgraduate students and working

professionals. This indicates that undergraduate students were less patient-centered than postgraduate students and working professionals for more than half of the items. For items 3, 4, 5, 8, 10, 11, 12, 14, 16, and 18, undergraduate students received less patient-centered responses than postgraduate students and working professionals. The relatively higher mean scores in the undergraduate group can be attributed to the potential lack of exposure to patients<sup>16</sup> and instructional methods employed by many institutions. In numerous academic settings, the undergraduates will typically encounter patients exclusively during their internship period. This limited exposure to patients and their primary focus toward theoretical knowledge could explain the inclination of their attitude toward clinician centeredness. Further, for two items (item 8 and item 14), a trend toward increased patient-centeredness was observed from undergraduate students to working professionals. However, for the rest of the items, scores for the undergraduate students were the least patient-centered. Still, there was little difference between the scores of postgraduate students and working professionals.

## Conclusions

The results of this study conclude that postgraduate students and working professionals are more patient-centric than undergraduate students. However, there is no significant difference between the attitude of postgraduate students and working professionals, which could be due to the fewer years of working experience, which varied from 1 to 2 years. Hence, the findings of the study highlights on the necessity of change in the training/ instructional approach for undergraduates in the Indian context, which could foster the cultivation of patient centric attitude. Such modification is crucial, given their potential impact on the treatment outcome, patient satisfaction, and overall efficacy.<sup>16</sup>

## Limitations and Future Directions

This study did not aim at finding a correlation between working professionals' attitudes toward patient-centeredness and their years of work experience. This study also did not attempt to correlate patient-centeredness among different groups between males and females. In the future, this study can be done on a larger population and can also try to find a correlation between years of work experience and attitude toward patient-centeredness, including individuals with more years of experience. Further, this study can also attempt to find the patient-centeredness between males and females.

### Ethical Approval

The manuscript adheres to the ethical standards according to the Declaration of Helsinki. Ethical approval was obtained from All India Institute of Speech and Hearing (AIISH) Ethical Review board for carrying out this study. Ethical guidelines formulated by the institutional board of

All India Institute of Speech and Hearing (AIISH), Mysore, were followed for this study.

### Informed Consent

Prior informed consent was taken from the participants for their willingness to participate in this study.

### Authors' Contributions

S.G. was involved in concept development, study design, data collection, analysis of the data, interpretation, and writing the manuscript; P.K.E. contributed to data collection, analysis of the data, interpretation, and writing the manuscript; C.P.M. was involved in concept development, study design, and data collection; P.P. was involved in concept development, study design, interpretation, and writing the manuscript.

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None.

### Conflict of Interest

None declared.

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