Original Article

Artigo Original

Hearing Health Care: perception of the users of a public service

Atenção à saúde auditiva: percepção dos usuários de um serviço público

Débora Soares Jardim[1]
Fernanda Jorge Maciel[2]
Marina Teixeira Piastrelli[3]
Stela Maris Aguiar Lemos[3]

Keywords

Evaluation
Satisfaction
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ABSTRACT

Purpose: Evaluate hearing health service under the users' perspective according to the aspects: access, care, communication, and professional competence, and its correlation with clinical, sociodemographic and assistance characteristics. **Methods:** This is an observational analytic cross-sectional study with a probability sample stratified by gender and age. The Hearing Health Care Assessment questionnaire and the Brazilian Economic Classification Criterion questionnaire were used. In total, 214 users were interviewed, which were assisted from May 2009 to May 2013. **Results:** It was observed that most of the evaluated users are female, elderly, literate, presenting moderate degree of hearing impairment, who had access to transportation out-of-pocket, was submitted to ENT evaluation for diagnosis and sought the service to purchase a hearing aid, besides belonging to class C. Regarding user satisfaction, most were satisfied with access, hearing evaluation, personalized service, benefit for the family, communication and information, and professional competence. In the analysis of correlation between the scores, it was found that when users are satisfied with access, as well as with communication and information, the total score increases with moderate correlation coefficient. **Conclusion:** The users showed greater satisfaction with the professional competence domain and lower satisfaction with the benefit for the family. In addition, assessment proved that access and communication are considered important quality indicators for the hearing health service according to users.

Descritores

Avaliação
Satisfação
Perda Auditiva
Sistema Único de Saúde
Fonoaudiologia

RESUMO

Objetivo: Avaliar um serviço de saúde auditiva sob a perspectiva do usuário segundo os aspectos: acesso, atendimento, comunicação, competência profissional e verificar sua correlação com características clínicas, sociodemográficas e assistenciais. **Método:** Trata-se de estudo observacional analítico transversal, realizado com amostra probabilística estratificada por gênero e idade. Foram utilizados os questionários de Avaliação do Serviço de Saúde Auditiva e o Critério de Classificação Econômica Brasil. No total, foram entrevistados 214 usuários, atendidos no período de maio de 2009 a maio de 2013. **Resultados:** Foi possível observar que a maioria dos usuários avaliados é do gênero feminino, encontra-se na faixa etária idosa, alfabetizada, grau de dificuldade auditiva moderada, teve acesso ao transporte por recursos próprios, passou por avaliação otorrinolaringológica para diagnóstico, buscou o serviço para aquisição do aparelho de amplificação sonora individual e é da classe econômica C. Quanto à satisfação dos usuários, a maioria demonstrou estar satisfeita quanto ao acesso, avaliação da audição, ao atendimento personalizado, ao benefício para a família, à comunicação e informação e competência profissional. Na análise de correlação entre os escores, verificou-se que, quando o usuário avalia bem o acesso, assim como a comunicação e informação, aumenta o escore total, com coeficiente de correlação moderado. **Conclusão:** Os usuários apontaram maior satisfação com o domínio Competência Profissional e menor satisfação com o de Benefício Familiar. Além disso, a avaliação do acesso e comunicação demonstraram ser importantes eixos para a qualidade do serviço de saúde auditiva por parte do usuário.

Correspondence address:
Débora Soares Jardim
Junta de Saúde Auditiva Microrregional de Betim
Rua Alessandra Salum Cadar, 651/202, Buritis, Betim (MG), Brazil, CEP: 30575-190.
E-mail: defonobh@yahoo.com.br

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Study carried out at Universidade Federal de Minas Gerais – UFMG - Belo Horizonte (MG), Brazil.

[1] Junta de Saúde Auditiva Microrregional de Betim - Betim (MG), Brazil.

[2] Escola de Saúde Pública de Minas Gerais - Belo Horizonte (MG), Brazil.

[3] Universidade Federal de Minas Gerais – UFMG - Belo Horizonte (MG), Brazil.

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INTRODUCTION

With the development of Política Nacional de Atenção à Saúde Auditiva (PNASA) [National Policy for Hearing Health Care] in October 2004, the Ministry of Health provides for full medical care for hearing impaired persons, with actions to promote health, prevention and rehabilitation. With its deployment, an increase of 113% in service coverage and 61% in the amount of medium and high-complexity diagnostic procedures in hearing health was observed throughout the entire national territory between 2004 and 2011[1].

The medium and high-complexity hearing health care services advocated by PNASA present actions for hearing rehabilitation, provides for fitting of the personal sound amplification devices (PSAP), professional medical and speech-language follow-up, adjustments and periodical checks of the technical conditions and benefits obtained from PSAPs, speech-language therapy, and social and psychological assistance[2].

From 2012, these services became part of Rede de Cuidados à Pessoa com Deficiência [Health Care Network for Persons with Disabilities] in the National Unified Health Care System (SUS), with the same guidelines aiming to provide full care to persons with hearing disabilities[3].

Several studies describe quality indicators of hearing health care and management[1,4-7] as a way to contribute to the actions developed by health care public policies in Brazil.

In order to build care and management quality indicators, assessing services is recommended as a way to contribute to the improvement of decision-making, programming, and organization processes. Results of evaluative research may therefore point to the weaknesses of a program, the organizational weaknesses and gaps around problems existent at various levels and layers of the Unified Health Care System[8].

In Brazil, hearing health care has been the object of evaluative research touching on aspects related to care activities and user satisfaction[6], presenting structure, process and results as the dimensions for evaluation[9].

In this study, satisfaction is one of the components of the health care quality evaluation[10]. Its objective is to evaluate a hearing health care service from the perspective of users according to the following aspects: access, service, communication, and professional competence, verifying their correlation with clinical, sociodemographic and assistance characteristics.

METHODS

This is a cross-sectional analytical observational study conducted with a probability sample stratified by gender and age.

The research data was obtained from a regional hearing health care facility of medium complexity in the state of Minas Gerais.

Junta de Saúde Auditiva Microrregional (JSAM) is located in Betim municipality, part of the metropolitan region of Belo Horizonte, with 408,873 inhabitants. It is the fifth largest city in the state, and one of the fifty largest in the country.

This study was carried out with the approval of the institution in which the service is located and of the Research Ethics Committee of Universidade Federal de Minas Gerais under protocol CAAE 0671.0203,000-11. All of the study's participants have signed the Informed Consent.

The research included users seen at JSAM-Betim for assessment before receiving a Personal Sound Amplification Device, who then received the device between May 2009 and May 2013, and who live in Betim. Users who underwent cochlear implant surgery and, therefore, presented a different health care journey, were excluded from the study.

With regard to age range, patients were classified according to Instituto Brasileiro de Geografia e Estatística[11]: children and adolescents from 0 to 14 years old, youngsters and adults at working age, from 15 to 60 years old, and elderly people above 60 years of age.

The sample calculation was defined considering a random sampling stratified by gender and age, with proportional allocation, with an estimated value of 253 users. To meet the goal, 306 users were invited to participate in the study. However, 86 failed to attend the appointment for the meeting and 1 refused to take part in the interview. Thus, the final sample was composed of 214 users, with a sample loss of 15%. It is considered that the loss did not influence the results analyzed in the present study, as in the sample size calculation a sample increase correction of 20% was performed.

The instruments used were the Hearing Health Care Assessment questionnaire proposed in the literature[6], which contains 18 questions based on the Hearing and Communication Group[12]. This evaluates hearing-impaired user satisfaction with the service offered in terms of: access to the service (four questions); hearing assessment (two questions); personalized service (two questions); benefits for the family (two questions); communication and information (six questions); and professional competence (two questions). For each question, answers were presented in multiple choice format and at a 5-point grading scale.

In the questions regarding sociodemographic characteristics, we adjusted the original instrument as to educational level. The options were: illiterate, incomplete elementary school, elementary school, high school, and higher education.

The Brazilian Economic Classification Criterion [Critério de Classificação Econômica Brasil] (CCEB)[13] questionnaire was also used. It consists of a set of questions used to compose an indicator that aims to estimate the purchasing power of individuals and families. The instrument provides a classification of economic classes, from A to E, based on variables possession of items and educational level of the head of the family. CCEB assigns scores according to the characteristics of each household and adds up these scores. Correspondence is made between the criterion's scoring ranges and classification strata.

It is worth noting that this study adopted the analysis proposed by the instruments[6,13].

The questionnaires were applied as an individual interview by a researcher. The interviews were audio recorded with a digital Sony recorder, ICD - PX 820, lasting approximately 30 minutes. The information collected was typed into a database designed on Excel®. Software STATA (Stata Corporation, College Station, Texas) version 12.0 was adopted.

For the descriptive analysis of the data, the categorical variables were presented with their respective frequencies and proportions; for the continuous variables, the mean, standard deviation, quartiles, minimum, maximum and median were presented.

Inferential analysis of the data was performed using the Spearman correlation to verify correlation among the following variables: age, education, degree of hearing impairment (self-reported), time for adaptation to PSAP, economic classification, and the domains of access, hearing evaluation, personalized care, benefit for the family, communication and information, and professional competence.

Correlation among the total score and the variables access, hearing evaluation, personalized care, benefit for the family, communication and information, and professional competence was also performed. A level of significance of 5% was adopted.

RESULTS

It was observed that the female gender (54.7%) is presented in slightly higher proportion than males (45.3%). The following presented in higher proportion: the elderly age range (61.7%), incomplete primary education (48.4%), moderate hearing loss degree (45.2%), access to transportation out-of-pocket (98.1%), otorhinolaryngological evaluation for diagnosis (49.5%), and people that sought the service for the personal sound amplification device (59.1%). The year which presented the highest number of PSAP fitting was 2012, with 25.23% of fittings performed within the period studied. With regard to the economic aspect, none of the users was classified as belonging to class A1 or A2, and class C presented the highest percentage (Table 1).

Results regarding the distribution of scores per domain obtained from the Hearing Health Care Assessment questionnaire are described in Table 2.

Table 3 shows that the correlations between the socio-demographic data and the domains of the Hearing Health Care Assessment questionnaire were mostly poor and not significant.

The correlation analysis between scores verified that the ones found to be most related to the total were Access (0.563) and Communication and Information (0.589), both with moderate correlation magnitude (Table 4).

Table 1. Socio-demographic characteristics of users seen at JSAM Betim and fitted with PSAP between May 2009 and May 2013 and Brazilian Economic Classification (CCEB) (n=214)

Variables		n	%
Gender			
	Female	**117**	**54.7**
	Male	97	45.3
Age range			
	Youngsters	11	5.1
	Adults	71	33.2
	Elderly	**132**	**61.7**
Educational level			
	Illiterate	54	25.4
	Incomplete elementary school	**103**	**48.4**
	Elementary school	32	15
	High school	20	9.4
	Higher education	4	1.9
Degree of hearing impairment (self-reported)			
	None	4	2.4
	Mild	20	11.9
	Moderate	**76**	**45.2**
	Severe	45	26.8
	Deep	23	13.7
Transportation			
	provided	4	1.9
	Out-of-pocket	**210**	**98.1**
Appointment scheduling			
	Direct	99	49
	Otolaryngologist	**100**	**49.5**
	Hearing tests	3	1.5

Caption: PSAP - personal sound amplification device/product

Table 1. Continued...

Variables		n	%
Type of service sought			
	Hearing tests	69	33.2
	Hearing test/aid	14	6.7
	Hearing aid	**123**	**59.1**
	Speech-language therapy	1	0.5
	Others	1	0.5
Year of PSAP fitting			
(First concession)	2009	30	14.02
	2010	16	7.48
	2011	36	16.82
	2012	**78**	**36.45**
	2013	54	25.23
Brazilian Economic Classification			
	A_1	0	0.0
	A_2	0	0.0
	B_1	9	4.2
	B_2	47	22.0
	C_1	**58**	**27.1**
	C_2	**67**	**31.3**
	D	31	14.5
	E	2	0.9

Caption: PSAP - personal sound amplification device/product

Table 2. Distribution of scores per domain obtained from the Hearing Health Care Evaluation questionnaire

Scores	Mean	Standard deviation	Minimum	1st Quartile	Median	3rd Quartile
Access	61.1	18.0	10	50	65	75
Hearing evaluation	81.5	24.9	0	60	100	100
Personalized service	79.5	22.2	10	60	85	100
Benefit for the family	**51.7**	23.0	0	40	50	60
Communication and information	86.4	12.8	26.7	80	86.7	100
Professional competence	**95.9**	11.3	30	100	100	100
Total	76.7	9.4	41.1	71.1	77.8	83.3

Table 3. Correlation among clinical, audiological and sociodemographic variables and the domains of Hearing Health Care Assessment questionnaire (n=214)

Variables	Access	Hearing evaluation	Personalized service	Benefit for the family	Communication and information	Professional competence
Age						
Rho	-0.147	-0.095	-0.039	-0.450	0.067	0.147
P-value	0.057	0.224	0.621	**<0.001***	0.393	0.057
Educational level						
Rho	0.087	0.134	0.011	0.194	-0.073	-0.027
P-value	0.266	0.085	0.893	**0.012***	0.346	0.730
Degree of hearing impairment•						
Rho	0.046	-0.052	-0.003	0.122	0.191	-0.005
P-value	0.554	0.509	0.970	0.118	**0.014***	0.952
Time to PSAP adaptation						
Rho	0.031	-0.035	-0.055	0.111	0.028	-0.183
P-value	0.687	0.657	0.476	0.155	0.717	**0.018***
CCEB						
Rho	0.045	0.141	0.126	0.076	0.052	-0.002
P-value	0.513	**0.040***	0.065	0.265	0.450	0.975

*p-value <0.05. Rho - Spearman correlation
Caption: • self-reported

Table 4. Correlation among domain variables and total score of Hearing Health Care Assessment questionnaire (n=214)

Scores	Access	Hearing evaluation	Personalized service	Benefit for the family	Communication and information	Professional competence	Total
Access	1.000						
Hearing evaluation	0.085	1.000					
Personalized service	0.061	0.331*	1.000				
Benefit for the family	0.201*	-0.010	0.085	1.000			
Communication and information	0.075	0.161*	0.138*	0.119	1.000		
Professional competence	0.049	-0.039	0.129	0.072	0.171*	1.000	
Total	**0.563***	0.500*	0.483*	0.460*	**0.589***	0.253*	1.000

*Spearman coefficient significant at 5%

DISCUSSION

The sample characterization corroborates the literature related to hearing health care[6]. The female gender predominance was also found in the satisfaction survey of patients submitted to physiotherapy[14]. As for educational level, the majority of respondents present incomplete elementary education, which is consistent with that expected for the elderly population in Brazil, whose average number of years of formal education is 4.2[11]. With regard to self-reported hearing impairment, the majority of users reported moderate difficulty and that they had been referred by the otorhinolaryngologist to begin the process of personal sound amplification device fitting. This reflects the flow of care, in which the user and/or family, upon perceiving hearing impairment, seeks medical care[15]. The predominant means of transportation was out-of-pocket, in other words, the user was responsible for their own transportation from/to home/health care unit.

The year 2012 presented a greater number of users fitted with PSAP, and this is a consequence of the distribution of quotas by municipalities, which has undergone changes with the increase regulated by the Secretaria Estadual de Minas Gerais [State Secretariat of Minas Gerais][16].

Assessment of the CCEB questionnaire showed that no users were classified in class A, and that the majority of patients seen by the service was classified under class C. This means that the gross family income of the majority of respondents corresponds to values between one and a half minimum wage and two minimum wages. This result corroborates the report by Associação Brasileira de Empresas de Pesquisas [Brazilian Association of Research Companies] (ABEP) from 2010, in which the majority of the population in the metropolitan area of Belo Horizonte is classified under class C[12].

Upon analysis of the results of the scores distribution by domains obtained from the Hearing Health Care Assessment questionnaire, users reported they are less satisfied with the benefit for the family and more satisfied with professional competence.

In a study conducted in Bauru (SP)[6], analysis of the benefit for the family score obtained the second lowest result. Thus, its authors proposed that this domain be removed from the protocol, as this topic is difficult to interpret in assessing hearing health care quality due to its subjectivity.

In the present study, this domain was not removed because it was considered important to evaluate and obtain data so that the service develops actions aimed at family relationships, at quality assistance to the user, with guidance and monitoring by interdisciplinary teams, so as to guarantee a comprehensive care service. It was observed that the instrument in fact fails to provide objective responses regarding the degree of difficulty for families.

In addition, it should be emphasized that assessment of the benefit for the family can be better performed by means of two concomitant strategies: questionnaire application by health agents and self-report of users. This model seems to be more effective in identifying significant improvements in communication of daily activities and, therefore, of their positive effects within the family context[17]. In this sense, a closer tie among Hearing Health Care Services, Family Support Health Centers, and Family Health Strategy is essential to guarantee comprehensive care.

With regard to professional competence, users state they are satisfied with the professional team. Some authors point out that, in assessing public services, the bias of gratitude may influence responses[18-20]. From this perspective, users omit their opinion and fail to report negative criticism due to fear of losing the service or the right to it, as well as of impacting their relationship with health care professionals. However, the instrument does not bring enough questions to deepen and/or address the complexity of this issue. Therefore, new research is needed on this topic to understand the relationship between professionals' skills, training, and performance, and the degree of user satisfaction.

The second lowest-rated domain was access. In the instrument used, "access" comprises geographical accessibility taking into consideration not only to the distance, but also to the time required for transportation[9]. In this sense, geographical proximity and the users' difficulty to arrive at the service unit constitute significant barriers to access[14,20]. In this study, this fact can be explained by referral of Betim users to the Hearing Health Care Services in Belo Horizonte and Nova Lima, which corresponds to a distance of approximately 30 kilometers. Transportation is not free of charge for these users, which lowers the score.

A study that discusses access, such as access of deaf people to health care, found significant challenges regarding communication of professionals with the deaf population, and point out gaps on knowledge of the hearing impaired about their health condition[21].

Also with regard to the discussion of results of scores per domain, the lowest minimum results are worth noting: hearing assessment and benefits for the family. The highest minimum was communication and information, and professional competence.

Although the minimum value for hearing assessment was 0, the first quartile was 60, i.e. the item was well assessed by users. Professional competence presented a maximum score as early as the first quartile. The benefit for the family presented a value below the others and remained with a low score.

It is worth noting that, although the correlations among socio-demographic data and the questionnaire domains were mostly poor, their discussion is considered important.

Assessment of the benefit for the family was negatively correlated to increased user age, and it is believed that this fact may be related to the functional dependence bias. The literature reports that the elderly are uncomfortable around their family due to hearing impairment[22], and that users have specific needs related to the psychosocial and economic vulnerability situation in which they find themselves[23].

Upon verifying effective use of PSAP by the elderly, its social benefits and their relationship with cognitive performance, researchers[24] found that patient follow-up by means of conventional tests and self-assessment questionnaires promote efficacy of PSAP use, reducing the number of patients who stop using the device because of dissatisfaction, whether due to functional or psychosocial aspects. In addition, they point out that the patient's cognitive state reveals whether there is a need for closer follow-up and specific family guidance.

A positive correlation was also observed between the domain of benefit for the family and the educational level variable, as observed in the literature with regard to user satisfaction with the services[20]. According to the framework of Functional Literacy in Health Care[25], an increase in educational level allows the user to have greater knowledge and autonomy concerning daily care and handling of the PSAP, a factor that contributes to decrease dependence on family with regard to use of the personal sound amplification device and, consequently, to increase the benefit for the family.

In this study, it was observed that an increase in self-reported hearing impairment is correlated with higher satisfaction as to communication and information received by the service's professionals. This may show that users with a higher degree of impairment receive differentiated attention on the part of professionals, allowing for better communication and user-professional dialog and, consequently, greater adequacy of communication to the patient's sociocultural particularities [23,26-29]. Therefore, providing appropriate attention may have positive effects in the user satisfaction assessment, as it is an important measure in health care.

Under the Hearing Assessment domain, the higher the users' economic classification, the higher user satisfaction. This was also found by a study that revealed that users with higher family income were more satisfied with the medical consultation and its scheduling process[28].

Assessment of professional competence was negatively influenced as the time to adaptation to the PSAP increases. This may be related to the lack of continuity of service when patients fail to go back to the service unit for speech-language therapy. A discrepancy between the average number of patients fitted and production of speech therapy is found in Minas Gerais[5]. In this sense, the network's biggest challenge is to strengthen the longitudinal dimension and decentralization of care by means of decentralized speech-language therapy. This fact may be due to lack of user knowledge about this follow-up[7] or even a lack of active search for patients by the service. The timeliness bias is also worth considering, since users with longer adaptation time may have difficulties to remember the quality of service provided at the time of PSAP fitting.

The correlation analysis among the domains variables and total questionnaire score found a higher correlation of domains access and communication and information with the overall satisfaction score. This shows that these are the critical aspects for quality of care from the user's perspective.

The literature presents a wide variety of approaches to analysis of access, such as reducing barriers, difficulty to schedule appointments, waiting time for appointments, which influence user satisfaction with the service[28-30]. Thus, establishing a clear communication of professionals by means of building a dialogical and horizontal relationship allows for greater participation of the user in their treatment and influence their assessment of the service[28-30]. In this vein, communication is highlighted as a key element to create bonds and, consequently, for the development of a care process that makes sense to the user and considers their life context. Therefore, hearing health services should be turned towards the establishment of comprehensive communication with the user, so that they achieve the perspective of self-care and create a bond with the program.

This study contributes to the assessment of hearing health care services under users' perspective and points out the challenges faced by the health care network in the sense of strengthening actions related to speech-language therapy actions following PSAP fitting and to communication between professionals and users and between hearing health care services and primary care, so as to ensure continuity of care. However, it is worth noting that other user satisfaction studies that take into consideration not only the users' perspective, but also the health care managers' and professionals, are necessary. Furthermore, although it is not included in the initial proposal of the instrument used, the research carried out inferential analysis of variable correlations of domains and total score of the Hearing Health Care Assessment questionnaire and was described with poor and insignificant correlations, indicating a possible weakness of the instrument proposed in evaluating these aspects.

CONCLUSIONS

Assessment of the hearing health care service under the users' perspective indicated that more than three quarters of respondents are satisfied with the service provided. The Hearing Health Care Assessment questionnaire was useful to characterize service, where the most highly considered aspects according to users are professional competence and communication and information. Access to service and benefit for the family were the aspects presenting the lowest satisfaction rates.

With regard to study of the questionnaire and the other variables, a consistent correlation between the PSAP benefit for the family and age was observed, where the higher the users' age, the lower the benefit for the family.

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Author contributions

DSJ contributed to the study conception, preparation, and review of the final manuscript; FJM contributed to the study conception, preparation, and review of the final manuscript; MTP contributed to the study conception, preparation, and review of the final manuscript; SMAL contributed to the study conception, preparation, and data collection.