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Satisfaction of users of hearing aids after using a responsive website in the adaptation process

Satisfação de usuários de aparelho de amplificação sonora individual após utilização de um site responsivo no processo de adaptação

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ABSTRACT

Purpose: The hearing aid provides benefits for individuals with hearing impairment. However, low levels of treatment adherence are still observed due to difficulties in the adaptation process. In this sense, the use of websites or applications stands out in order to assist in the process of orienting users. To evaluate the satisfaction of users of hearing aids after using a responsive website designed to assist in the adaptation process. **Methods:** Quantitative analytical experimental study non-randomized clinical trial whit 20 participants, divided into two groups. The study group made use of the responsive website as an aid tool in adapting, in addition to also receiving the guidelines in their traditional format. The control group was guided only with the traditional format already existing in the service. After one month, the participants answered a satisfaction assessment questionnaire, as well as an analysis of the datalogging. **Results:** The responsive website had guidance on maintenance and tips on using the individual hearing aid, allowing easy access to the main guidelines for inexperienced users. The analysis of the data showed more positive responses to the questionnaire by the study group, as well as a longer time of daily use of hearing aids. **Conclusion:** The group that used the responsive website as a complementary tool to the adaptation process of the hearing aid showed, from the assessment of satisfaction and data from the datalogging tool, greater satisfaction and a longer time of daily use of the hearing aid.

Keywords: Hearing loss; Hearing aids; Technology; Unified health system; Surveys and questionnaires

RESUMO

Objetivo: O aparelho de amplificação sonora individual propicia benefícios para indivíduos com deficiência auditiva. No entanto, ainda são observados baixos níveis de adesão ao tratamento, devido às dificuldades no processo de adaptação. Neste sentido, destaca-se o uso de *sites* ou aplicativos com os objetivos de auxiliar no processo de orientação aos usuários e de avaliar a satisfação de usuários de aparelho de amplificação sonora individual, após a utilização de um *site* responsivo desenvolvido para auxiliar no processo de adaptação. **Métodos:** Estudo quantitativo analítico experimental, ensaio clínico não randomizado, com 20 participantes, divididos em dois grupos. O grupo estudo fez uso do *site* responsivo como ferramenta de auxílio na adaptação, além de receber as orientações em seu formato tradicional. O grupo controle foi orientado somente pelo formato tradicional já existente no serviço. Após um mês, os participantes responderam a um questionário de avaliação de satisfação e também foi realizada a análise da ferramenta *datalogging*. **Resultados:** O *site* responsivo contou com orientações sobre manutenção e dicas de uso do aparelho de amplificação sonora individual, permitindo fácil acesso às principais orientações ao usuário inexperiente. A análise dos dados demonstrou respostas mais positivas ao questionário pelo grupo estudo, bem como maior tempo de uso diário dos aparelhos de amplificação sonora individuais. **Conclusão**: o grupo que utilizou o *site* responsivo como ferramenta complementar ao processo de adaptação do aparelho de amplificação sonora individual mostrou, a partir da avaliação da satisfação e dos dados da ferramenta *datalogging*, maior satisfação e maior tempo de uso diário do aparelho.

Palavras-chave: Perda auditiva; Auxiliares de audição; Tecnologia; Sistema Único de Saúde; Inquéritos e questionários

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INTRODUCTION

Hearing is essential in social interaction situations when communication takes place orally, and hearing loss not only affects individuals' ability to properly understand sound information, but also the way they relate to their environment and culture, which can lead to biological, psychological and social consequences[1-3].

Thus, hearing loss diagnosis and intervention should be carried out as early as possible. In several situations, the rehabilitation process occurs with the indication, selection and fitting of hearing aids[4,5].

In Brazil, hearing health services authorized by the Ministry of Health must offer an intervention process that includes audiological diagnosis, selection and fitting of hearing aids appropriate to the individual's acoustic characteristics and needs, audiological monitoring and speech therapy for the development of their auditory and language skills[6].

Some hearing aid users and their families are quickly involved in the hearing aid fitting process, which facilitates evolution. However, most users, although regularly attending therapies, do not use their hearing aids in other daily situations, one of the reasons why the service should offer actions to promote adherence to treatment[5].

A study[3] showed that, even with a high rate of hearing loss in the elderly population, only 20% of these individuals acquire hearing aids. In addition, about 30% of users mentioned dissatisfaction with their hearing aids, and approximately 16% reported never having used these devices effectively[3].

In view of this report and considering the possibility of using technology for applications in health, the benefits of using websites and apps to optimize health interventions and improve clinical decision-making are highlighted[7].

In Brazil, 93.2% of households have smartphone users, a significant number due to the easy access of purchase, usability and easy connection with the virtual world. These facts impact society and guarantee a high potential for use in the area of education, health and integral care[8].

An extensive literature review on the use of mobile tools listed some of the characteristics that favor the use of applications in the health context, highlighting accessibility, mobility, low cost, continuous data transmission capacity, geolocation and multimedia capacity[9].

A responsive website is one that adapts its features to any mobile device and, as the number of people who have smartphones is significant, as mentioned above, the use of responsive websites can help access tips, and can guide on the proper use of hearing aids.

Based on the important benefits provided by the use of hearing aids by individuals with hearing loss, and on the difficulties in adhering to the treatment, the aim of this study was to assess these users' satisfaction after using a responsive website developed to assist in the hearing aid fitting process.

METHOD

The study is a quantitative experimental analytical, non-randomized clinical trial, carried out from July to September, 2018 with individuals of both sexes, in a school clinic that grants hearing aids by the Unified Health System (SUS), belonging to the Alagoas State University of Health Sciences (UNCISAL). The study was approved by the Research Ethics Committee of the institution, under CAAE number 79991317.0.0000.5011, and review number 2.396.457.

Step 1 - Development of the responsive website

The website was developed using the PHP programming language (Hypertext Preprocessor) and Wordpress content management system. The registration of the software at the National Institute of Industrial Property (INPI) was issued on October 30, 2018 (process No.: BR512018051938-5).

The production of the responsive website, registered at: *www.aasi.com.br*, was based on the following criteria: 1) layout/interface adapted to the profile of the target audience, considering the user experience; 2) design aimed at facilitating information location, retrieval and readability; 3) objective textual content, and simple language; 4) short, clear and self-explanatory videos.

The website's home screen displays two main links: Maintenance and Tips (Figure 1). In addition, there is a third link named CER III – UNCISAL (Specialized Center in Rehabilitation III – UNCISAL). Each link comprises:

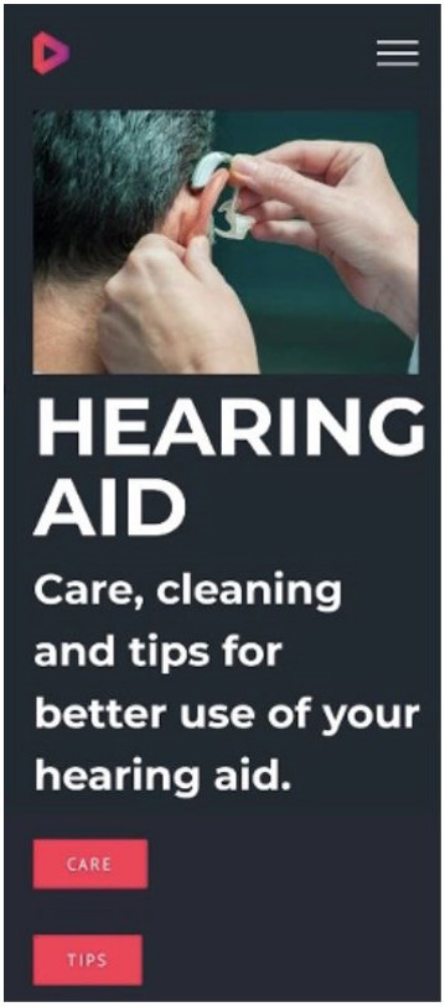

Figure 1. Layout of the developed website (www.aasi.com.br)

1. Maintenance – six topics that cover contents necessary for the good maintenance of the hearing aid: cleaning the hearing aid with the mold; cleaning the hearing aid with a thin tube; correct mold fitting; how to change batteries; air pump and dehumidifier;
2. Tips – eight topics that cover content with tips for using hearing aids: care with the hearing aid; which side is the correct hearing aid?; how to fit the earmold hearing aid into the ear; how to fit the thin tube hearing aid into the ear; batteries; how to use the phone with the hearing aid; avoid using cotton swabs and quick tips;
3. CER III – UNCISAL – brief explanation about the service and contact telephone number for appointments.

The texts, photos and videos allow easy access to the main guidelines for the inexperienced hearing aid user.

Step 2 - Assessment of user satisfaction with hearing aids after using the responsive website

The sample consisted of 20 participants, 14 female and six male participants, selected by convenience. The participants' age ranged from 38 to 69 years and all signed the Informed Consent Form, respecting the guidelines and regulatory standards for research on human beings.

In the control group (CG), literate individuals aged between 25 and 70 years were included; with bilateral hearing loss of mild, moderate, moderately severe and severe degrees; inexperienced in hearing aid use; referred by the otorhinolaryngologist for hearing aid fitting.

In the study group (SG), literate individuals aged between 25 and 70 years were included; with bilateral hearing loss of mild, moderate, moderately severe and severe degrees; inexperienced in hearing aid use; referred by the otorhinolaryngologist for hearing aids use. In addition, participants needed to be mobile device users.

In order to suppress variables that could influence the results regarding the hours of hearing aid use and these users' satisfaction, individuals with profound hearing loss, any neurological or psychiatric disorder, middle ear infection and complaint of tinnitus were excluded. For the last two criteria, the objective was, respectively, non-use of hearing aids because of middle ear infection, and homogenization of the groups regarding the hearing aid resources, as the use of techniques to treat tinnitus could represent a research bias.

For the stage that included assessing the responsive website, based on data from medical records and on the established inclusion and exclusion criteria, possible research participants were selected and invited. After acceptance, the procedures to be carried out were explained orally, and then the consent form was signed. Subsequently, the following procedures were performed:

1. The SG was composed of ten individuals who were guided in the traditional format when granted the hearing aid, and they made use of the responsive website through smartphones. The traditional format consisted of guidelines described in a flyer printed on A4 paper, as well as practical explanations demonstrated by the service's speech therapist. Information and questions about the responsive website were also clarified on the day of the hearing aid fitting. The responsive website is an educational technological resource that adapts to any mobile device, such as cell phones or tablets. It has textual information, photos and videos guiding on the use, handling, battery replacement, hygiene and cleaning of the hearing aid;
2. The CG was composed of ten individuals who did not use the responsive website as a tool to help during the hearing aid fitting. They were guided exclusively with the traditional format established by the service;
3. One month after the hearing aid was granted, participants from both groups returned to the service for the first review session and they completed a satisfaction assessment questionnaire, the Brazilian Satisfaction With Amplification in Daily Life (SADL) (Annex 1 - Brazilian-Portuguese version adapted)[10]. The SADL is a useful questionnaire for clinical application[11] and is characterized as an instrument that assesses the measure of user satisfaction with the use of hearing aids in daily life. It consists of 15 questions, divided into four subscales: 1) positive effects (six items associated with acoustic and psychological benefits); 2) service and cost (three items associated with professional competence, price of the product price and number of repairs); 3) negative features (three items related to the amplification of environmental noise, the presence of feedback and the use of telephones); 4) personal image (three items related to aesthetic factors and the stigma of using hearing aids).

Participants answered each question, choosing one of the possible answers: not at all, a little, somewhat, medium, considerably, greatly and tremendously. For 11 questions, "tremendously" indicates total satisfaction and is scored 7, while "not at all" indicates total dissatisfaction and is scored 1 (questions 1, 3, 5, 6, 8, 9, 10, 11, 12, 14, 15). However, the other questions are inverted, and "tremendously" indicates total dissatisfaction, scored with 1, and "not at all" indicates total satisfaction, scored with 7[12].

Satisfaction scores were calculated by arithmetic mean, through somatic norms of the points in the questionnaire items. "Dissatisfied" were those with a score below the normative value for the 20th percentile, "satisfied" those with scores between the 20th and 80th percentiles, and "very satisfied" those with a score above the 80th percentile[13]. As the research was conducted at a rehabilitation center that grants hearing aids by SUS at no cost, question number 14 was not relevant and, therefore, was not considered in the study.

4. In this same session, the analysis of the datalogging tool, activated on the fitting, was performed for both groups, aiming at verifying the number of daily hours of hearing aid use;
5. Finally, the answers to the questionnaire were compared to the data from the datalogging tool.

Statistical analysis

Statistical analysis was performed using the BioEstat application, version 5.0 for Windows. To describe the data,

a tables and graphs of means and standard deviations were constructed. Initially, an assessment of the sample was carried out, in order to observe its adherence to the normal distribution, using the Lilliefors test. To assess the questions of the SADL questionnaire, the non-parametric Mann-Whitney test for independent samples was used. Then, to compare groups regarding datalogging data, Student's t test was used. Differences were considered significant for p values below 0.05, and the admitted beta value was 0.1.

RESULTS

The sample consisted of 20 participants, 14 (70%) female and 6 (30%) male participants. The participants' age ranged from 38 to 69 years (mean age 56.05 years and standard deviation 10.45 years), and all were smartphone users. The distribution by sex, age group, mean age and standard deviation, by group, is described in Table 1.

As for socioeconomic status, the sample distribution by group was as follows: SG - 20% corresponded to a monthly family income of approximately 6 minimum wages, and 80% to a monthly family income of approximately 2 minimum wages; CG - 30% corresponded to a monthly family income of approximately 6 minimum wages, and 70% to a monthly family income of approximately 2 minimum wages.

As for education level, the distribution was presented as follows: SG - 40% with complete high school, and 60% with complete elementary school; CG - 30% with complete high school, and 70% with complete elementary school.

For the variables, income and education, using the Chi-square statistical test, no statistical differences were observed between the two groups (p=0.606 for family income, and p=0.639 for education).

All study participants were fitted with behind-the-ear hearing aids, according to service availability (Figure 2).

Different types and degrees of hearing loss were found for the two studied groups (Table 2).

The study on the website traffic during the data collection period resulted in a total of 83 accesses. The most accessed pages, excluding the home page, followed the order: "Which is the correct side of the hearing aid?", "Batteries", "How to change batteries" and "How to use the phone with the hearing aid".

The participants' profile was determined from the pre-established reference values, according to the SADL global satisfaction score. The CG presented an average of 23% for "very satisfied" and 6.1% for "dissatisfied". The SG, in turn, presented an average of 62.7% for "very satisfied" and 2.2% for "dissatisfied".

To compare the answers to the SADL questionnaire per group, the non-parametric Mann Whitney test for independent samples was used (Table 3).

For the datalogging evaluation per study group, the Lilliefors test showed a normal distribution of the sample. Thus, the analysis was performed using Student's t test, with a p-value <0.001. The mean hours per day was 2.77 hours for the control group (standard deviation of 2.07 hours) and 7.92 hours for the study group (standard deviation of 1.8 hours).

Figure 3 shows the number of hours of hearing aid use per day, per participant, according to the studied group.

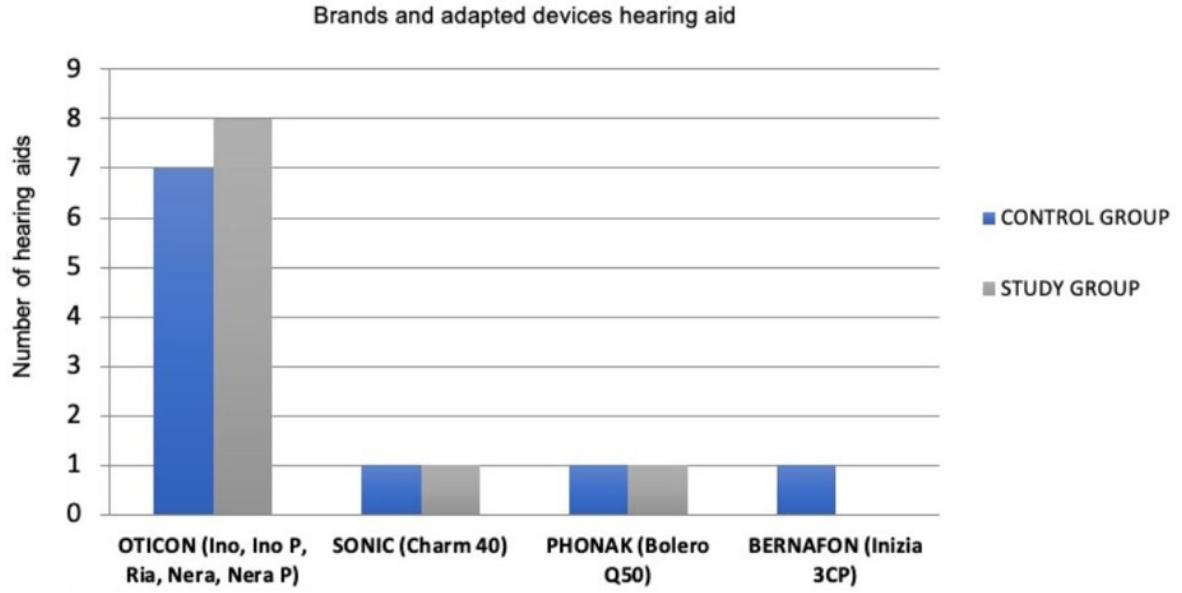

Figure 2. Brands and adapted devices hearing aids, by studied group
Source: Research data

Table 1. Distribution by sex, age group, mean age and standard deviation, by studied group

Group	Male (%)	Female (%)	Age range (years)	Mean age (years)	Standard Deviation (years)	n
CG	40	60	40 – 69	54.3	11.02	10
SG	20	80	38 – 67	57.8	10.12	10

Subtitle: % = percentage; CG = control group; SG = study group; n = number of participants. Source: Research data

Table 2. Characterization of the study participants' hearing losses as for types and degrees

Control Group	n	%
SNHL	2	20
SNHL mild	2	20
SNHL moderate	3	30
SNHL moderately severe	1	10
MHL mild	2	20
Study Group	**n**	**%**
SNHL	3	30
SNHL mild	1	10
SNHL moderate	2	20
SNHL moderate (RE) / severe (LE)	2	20
MHL moderately severe	1	10
MHL moderate (RE) / SNHL (LE)	1	10

Subtitle: n = number of participants % = percentage; SNHL = sensorineural hearing loss; MHL = mixed hearing loss; RE = right ear; LE = left ear

DISCUSSION

Providing elements for referring a favorable educational resource and the best follow-up method in auditory rehabilitation is deemed an important and urgent measure, as it will reduce non-use and dissatisfaction among hearing aid users. Furthermore, identifying the causes and developing strategies to achieve effectiveness for intervention is essential[13].

The present study, on the use of a website with guidelines on the use of hearing aids, had a higher prevalence of female participants. The average age, regardless of the group, represented a population that, in general, uses smartphones, which was confirmed during the research.

Regarding the hearing losses described in Table 2, there was a higher prevalence of the sensorineural type, data similar to that of a study aimed to understand the satisfaction of using

Table 3. Number of people who answered certain alternatives, by studied group

Question	Group	Not at all	A little	Somewhat	Medium	Considerably	Greatly	Tremendously	P Value
Q1	CG	1	0	1	3	0	1	4	0.03*
	SG	0	0	0	0	0	1	9	
Q2	CG	7	0	1	2	0	0	0	0.90
	SG	6	2	1	1	0	0	0	
Q3	CG	2	0	0	3	0	3	2	0.004*
	SG	0	0	0	0	0	1	9	
Q4	CG	2	0	1	0	4	1	1	0.04*
	SG	8	0	0	0	2	0	0	
Q5	CG	1	0	0	0	5	0	4	0.36*
	SG	0	0	0	1	2	1	6	
Q6	CG	0	1	1	0	4	0	4	0.02*
	SG	0	0	0	0	0	0	10	
Q7	CG	1	0	1	1	2	4	1	0.001*
	SG	8	0	0	2	0	0	0	
Q8	CG	0	1	1	1	2	2	3	0.00*
	SG	0	0	0	0	0	0	10	
Q9	CG	0	0	0	1	4	2	3	0.01*
	SG	0	0	0	0	0	1	9	
Q10	CG	2	0	0	0	0	2	6	0.54
	SG	0	0	0	1	1	1	7	
Q11	CG	1	0	1	2	1	4	1	0.02*
	SG	0	0	0	0	1	4	5	
Q12	CG	0	0	1	2	0	3	4	0.02*
	SG	0	0	0	0	0	0	10	
Q13	CG	2	0	1	3	4	0	0	0.002*
	SG	10	0	0	0	0	0	0	
Q14	CG	-	-	-	-	-	-	-	-
	SG	-	-	-	-	-	-	-	
Q15	CG	3	0	0	1	2	1	3	0.008*
	SG	0	0	0	0	0	0	10	

Mann Whitney Test; *Statistically significant value ($p<0.05$)

Subtitle: CG = control group; SG = study group; Q1 = Compared to using no hearing aid at all, do your hearing aids help you understand the people you speak with most frequently; Q2 = Are you frustrated when your hearing aids pick up sounds that keep you from hearing what you want to hear?; Q3 = Are you convinced that obtaining your hearing aids was in your best interests?; Q4 = Do you think people notice your hearing loss more when you wear you hearing aids?; Q5 = Do your hearing aids reduce the number of times you have to ask people to repeat?; Q6 = Do you think your hearing aids are worth the trouble?; Q7 = Are you bothered by an inability to get enough loudness from your hearing aids without feedback (whistling)?; Q8 = How content are you with the appearance of your hearing aids?; Q9 = Does wearing your hearing aids improve your self-confidence?; Q10 = How natural is the sound from your hearing aids?; Q11 = How helpful are your hearing aids on MOST telephones without amplifier or loudspeakers?; Q12 = How competent was the person who provided you with your hearing aids?; Q13 = Do you think wearing your hearing aids makes you seem less capable?; Q14 = Does the cost of your hearing aids seem reasonable to you?; Q15 = How pleased are you with the dependability (how often they need repairs) of your hearing aids? Source: Research data

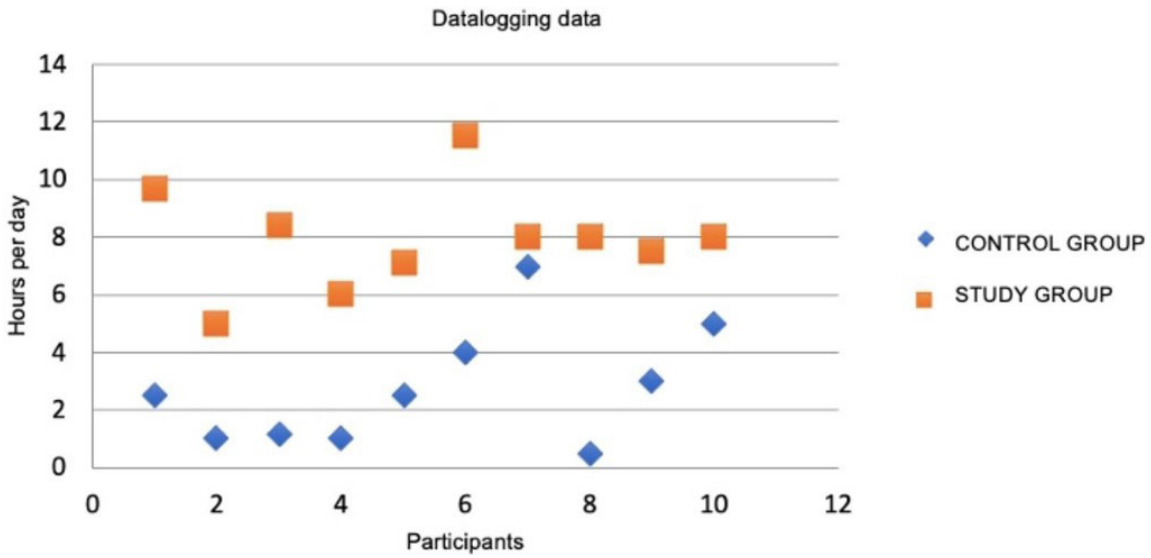

Figure 3. Number of hours of hearing aid use per day, according to the studied group
Source: Research data

hearing aids among users assisted by a hearing health service, which identified the associated factors and the perception about the care[13].

From the findings, positive responses were observed regarding the use of hearing aids after using the responsive website, as well as longer use by the SG, a result that can be explained by the increasing use of mobile devices, which allow exchanging messages, reading news, performing various other daily tasks, including receiving information regarding health guidelines[9].

Thus, the creation of a responsive website accessible by mobile devices, was intended to assist and benefit the fitting process in relation to the guidelines for use, since these are provided, mostly, orally or in written, on the fitting day. In many cases users despise the information provided in the traditional way and, when they actually need to carry out maintenance or adjustments to the hearing aid, they have difficulties in remembering how to do it, a situation that leads to faster degradation of the device and/or even non-use.

Research[14] has revealed that behind-the-ear hearing aids and technological category A (most commonly distributed models by the SUS and used in this research), are the ones with the highest number of technical failures, most found in amplifiers and microphones. The authors concluded that, in 50% of the analyzed cases, the technical failure occurred within 16 months after the hearing aid was fitted, still under warranty.

It is highlighted that numerous technical failures do not usually occur during the warranty period. The result of the mentioned research may have occurred due to lack or insufficient guidance regarding maintenance/cleaning, water and dust in the hearing aid and/or forgotten batteries inside the device, which causes oxidation and damage to the circuit. Thus, the use of illustrations and explanatory videos on the responsive website in question was intended to reduce this statistic.

Assessing satisfaction in hearing aid users can be performed from different perspectives, and questionnaires represent a common and effective practice in clinical routine. The SADL questionnaire addresses areas that assess user satisfaction with hearing aids, presenting questions directly linked to positive effect (associated with acoustic and psychological benefits, services and costs, professional competence, product price and number of repairs) as well as items related to negative features (related to the amplification of environmental noise, presence of feedback and use of telephones) and items related to personal image (aesthetic factors and stigma of using hearing aids)[10].

The SADL has even shown to be a useful instrument to assess satisfaction and quality of life in auditory brainstem implant users, in association with the Questionnaire for Measuring Health-Related Quality of Life in Children and Adolescents (KINDLR) for children and adolescents, parents and/or caregivers and the World Health Organization Quality of Life - Bref questionnaire (WHOQOL-BREF), abbreviated from the WHOQOL-100 questionnaire, for adult participants, according to an investigation conducted with 19 users of auditory brainstem implants[15].

The comparison of the two groups studied in this research, based on the SADL responses, showed more positive responses for the SG, that is, for the group that used the responsive website as a tool to aid in the hearing aid fitting, when compared to the CG.

Given that some points of the questionnaire are linked to the individual's psychological health and hearing aid acoustics and, therefore, do not have a direct relationship with the responsive website, questions such as number 2, in which the capture of sounds that prevent hearing of certain target sounds did not show statistical significance; this finding is possibly explained by the fact that the referred question was not influenced by the use of the website, but by the technology and resources offered by the hearing aids.

Regarding question number 3, in which the user is asked if obtaining the hearing aid was part of his/her greatest interests, there was statistical significance for the SG, which demonstrates appreciation and, ultimately, better hearing aid fitting.

Regarding item number 10, which questions whether the hearing aid provides a natural sound, no statistical significance was observed. The data demonstrates, once again, the non-interference of the use of the responsive website, but the acoustic quality of the devices and the specific characteristics of each hearing aid, depending on their technology and available resources.

All the other questions, whether referring to the ability to understand speech, achieved gains, satisfaction with the use of hearing aids, the competence of the professional who provided the service or the patient's perception of whether the use of hearing aids made them seem less capable, showed a statistical difference between the two groups, which demonstrated an important contribution from the use of the responsive website by users, during the hearing aid fitting process.

This study identified 6% of users dissatisfied with hearing aids in the group that did not use the responsive site, in line with a study that used SADL to assess the satisfaction of 180 hearing aid users and identified 3.9% of dissatisfied users. Although the authors indicated that 48.9% of users were very satisfied, they reported that this factor was found in users of in-the-ear hearing aids, different model from the one used in this research[16].

Regarding the analysis of the datalogging tool, a significant difference was found for the SG. The daily hours of hearing aid use by individuals who used the responsive website was practically three times higher in comparison with the daily hours by individuals in the CG, according to Figure 3. The result suggests that new strategies for guidance and follow-up should be developed and applied, with the objective of promoting better hearing aid fitting processes, considering the target audience, their limitations, possibilities and preferences.

Datalogging proves to be a determining tool, especially when the information is related to the SADL questionnaire, since the data resulted in a higher mean of daily hours of hearing aid use by individuals in the SG, which characterizes a positive assessment of the responsive website developed in the study[17,18].

One of the limitations considered in this investigation was the profile of the user at the service where the research was conducted, which is mostly represented by elderly people and people with low socioeconomic profiles. Thus, structuring a group that owned and used both mobile devices and the offered technological resources represented a challenge. However, the limitation did not preclude significant and important findings, as confirmed by the presented results.

Therefore, similar studies developed with a larger sample and with different ages, including the follow-up for adequate resources for each age group, especially for the child population are suggested.

The combination of technology and hearing health can significantly contribute to better hearing aid fitting, with the consequent adherence to treatment in hearing rehabilitation by patients with hearing loss.

CONCLUSION

The group that used the responsive website as a complementary tool to the hearing aid fitting process by SUS users showed, from the user satisfaction assessment through the SADL questionnaire and data from the datalogging tool, greater satisfaction and longer daily hearing aid use.

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Annex 1. Brazilian-Portuguese version of the culturally adapted *Satisfaction With Amplification in Daily Life* questionnaire[15]

SATISFACTION WITH AMPLIFICATION IN DAILY LIFE (ADAPTED)
Name: _____ Date of birth ___/___/_____
Today's Date ___/___/_____

INSTRUCTIONS: Listed below are questions on your opinions about your hearing aid(s). For each question, please circle the letter that is the best answer for you. The list of words on the right gives the meaning for each letter. Keep in mind that your answers should show your general opinions about the hearing aids that you are wearing now or have most recently worn.

A Not at all B A Little C Somewhat D Medium E Considerably F Greatly G Tremendously

1. Compared to using no hearing aid at all, do your hearing aids help you understand the people you speak with most frequently?
A B C D E F G
2. Are you frustrated when your hearing aids pick up sounds that keep you from hearing what you want to hear?
A B C D E F G
3. Are you convinced that obtaining your hearing aids was in your best interests?
A B C D E F G
4. Do you think people notice your hearing loss more when you wear your hearing aids?
A B C D E F G
5. Do your hearing aids reduce the number of times you have to ask people to repeat?
A B C D E F G
6. Você acha que vale a pena usar o aparelho auditivo?
A B C D E F G
7. Do you feel uncomfortable when you turn up the volume and feedback occurs (whistling)?
A B C D E F G
8. How content are you with the appearance of your hearing aids?
A B C D E F G
9. Does wearing your hearing aids improve your self-confidence?
A B C D E F G
10. How natural is the sound from your hearing aids?
A B C D E F G
11. How helpful are your hearing aids on MOST telephones with NO amplifier or loudspeaker?
(If you hear well on the telephone without hearing aids, check here [ ])
A B C D E F G
12. How competent was the person who provided you with your hearing aids?
A B C D E F G
13. Do you think wearing your hearing aids makes you seem less capable?
A B C D E F G
14. Does the cost of your hearing aids seem reasonable to you?
A B C D E F G
15. How pleased are you with the dependability (how often they need repairs) of your hearing aids?
A B C D E F G