



## SATISFACTION WITH A HEARING AID AND SOCIO-EMOTIONAL PROBLEMS OF ELDERLY PEOPLE WITH HEARING LOSS

<sup>1</sup>. FACULTY OF SPECIAL EDUCATION AND REHABILITATION, UNIVERSITY OF BELGRADE, SERBIA

<sup>2</sup>. CLINIC OF REHABILITATION DR M. ZOTOVIC, BELGRADE, SERBIA

**ABSTRACT:** Hearing loss which is associated with aging becomes a growing problem in the world and the overall objective of this paper is directed to the establishment of satisfaction with a hearing aid and socio-emotional obstacles in everyday life of elderly people with hearing loss. All the participants have a bilateral sensori-neural hearing loss, where partial deafness and impeded intelligibility are the leading symptoms. The noninvasive diagnostic methods and a questionnaire which encompassed 15 questions (a self-assessed hearing aid and assessment of socio-emotional problems) were applied in the assessment. Results indicate that patients wait an average of 4 to 8 years to see a doctor about the hearing problem. The measured hearing impairment prevalence with elderly people who are not using hearing aid is high and amounts to 50.8%. Even 76.6% of participants are completely or partially dissatisfied with hearing aid, and that's the reason why less than half of the sample uses it regularly. But, regular usage of hearing aid significantly affects the reduction of socio-emotional problems ( $p \leq 0.000$ ). It is evident that there is the need to develop better health care of population and expand strategies for the improvement of the mental and physical abilities of the elderly; more attention should be paid to the identification and treatment of hearing in elderly people.

**KEYWORDS:** hearing aid, socio-emotional problems, elderly people, hearing loss

### INTRODUCTION

Hearing loss which is associated with aging becomes a growing problem in the world (1). With increased life expectancy there are more people that suffer from hearing loss in their later years. Researches in USA indicate that PBA affects 40% of population older than 75, and with years the prevalence becomes all higher. National Health and Nutrition Examination Survey (2005-2006) reports that among adult persons of 70 and older the prevalence of hearing loss is 63%, and in those with moderate to severe hearing loss is 27% (2). WHO estimates that 299 million of men and 239 million of women have hearing loss. The most recent researches suggest that the number of citizens with hearing loss can be significantly increased by 2030 (3, 4).

The term presbycusis is related to the hearing loss associated with the degenerative process of aging cochlea. Presbycusis (PBA) or senile (old) hearing loss is defined as a bilateral, symmetrical, sensorineural hearing loss which is of irreversible character (5, 6). The appearance of PBA mainly depends on genetic factors; however, it could also appear under the influence of environmental factors, like noise, ototoxic drugs, alcohol, diabetes and other (4).

The consequences of hearing loss are very significant because they are connected with communication, socio-emotional problems, depression symptoms and social isolation (5, 6).

Taking into account the scientific discoveries on problems that arise with hearing loss, the focus of this work is directed to the establishment of socio-emotional obstacles in everyday life of elderly people with hearing loss.

### MATERIALS AND METHODS

The research is conducted in the ENT Clinic of the Zvezdara Medical Centre, Department for Audiovestibular Pathology and Phoniatics, in the Republic of Serbia, from November 2011 to April 2012.

The sample formed according to a random selection principle had 63 participants, 33 or 52% of male and 30 or 48% of female gender. All participants have bilateral sensorineural hearing loss, with or without tinnitus, partial deafness and impeded intelligibility are the leading symptoms. Tonal audiometry revealed that in most of the cases the participants appear to have mild (26-40dB; 13 or 20.6%), moderate (41-55dB; 18 or 28.6%) and moderately severe (56-70dB; 24 or 38.1%) hearing loss (according to WHO Classification). Severe (71-80dB; 6 or 9.5%) and very severe (81-90dB; 2 or 3.2%) degree of hearing loss is established in an insignificant number of participants.

The sample formed in relation to the age group is divided into two subgroups: younger group (56-70 years old) and encompasses 33 or 52.4% of participants and older group (71-85 years old) which make 30 or 47.6% of participants. Of the overall number of participants, 15 or 23.9% of participants (9 or 14.4% of male and 6 or 9.5% female gender) is employed, while the rest is retired. The participants are equalized by gender ( $p=0.900$ ) and age group ( $p=0.705$ ).

The standardized questionnaire contains 15 questions that examine two domains: a self-assessed hearing aid (6 items) and assessment socio-emotional problems (9 items) (Appendix 1).

The value of the Cronbach's  $\alpha$  Coefficient is 0.795 and represents a reliable correlation level among set of questions within examined dimensions. During the data processing we have used descriptive statistics methods, non-parametric tests (Chi-square and Kruskal-Wallis Test) and reliable analysis.

## RESULTS

There are factors that increase the probability for an individual to present with presbycusis, such as age and sex (7), but in our research we have not find them statistically significant ( $p=0.400$  for gender;  $p=0.120$  for age).

Our research results indicate that patients do not recognize hearing loss for a long period of time, because in 43 or 68.3% of participants 4 to 8 years pass from the time they notice that they are hard of hearing till the time the doctor has confirmed the PBA. Even 10 or 15.9% of participants waited from 2 to 4 years to see a doctor, and 5 or 7.9% of participants waited from 1 to 2 years to consult a doctor due to the hearing problems. Only 5 or 8% of participants after 6 months to a year turned to a doctor because of auditory problems ( $\chi^2=94.698$ ,  $p \leq 0.000$ ).

Measured prevalence of hearing loss in elderly people who do not use hearing aid is rather high in our research and amounts to 50.8%, while in the study of Chang, Ho, Chou, (8) amounts up to 79%. Even 42 or 76.6% of participants are completely or partially dissatisfied with hearing aid, and that's the reason why less than half of the sample uses it regularly (31 or 49.2%). Only a third part of the sample (21 or 33.3%) is completely satisfied with the hearing aid that they use.

The acquisition of a hearing aid in 33 or 52.4% of participants was financed by the health insurance, and 12 or 19% of participants do not have a hearing aid because it was unavailable due to financial reasons. Only 18 or 28% of participants financed the procurement of a hearing aid personally ( $\chi^2=31.794$ ,  $p \leq 0.000$ ).

## SOCIO-EMOTIONAL PROBLEMS

The analysis of Table 1 established that the timely auditory rehabilitation ( $p=0.002$ ), degree of hearing loss ( $p=0.012$ ) and regular usage of a hearing aid ( $p \leq 0.000$ ) influence socio-emotional status of elderly people with the PBA.

Table 1. Socio-emotional problems of participants in relation to the time of the hearing loss to the diagnosis, degree of hearing loss, age group and regular usage of a hearing aid

Socio-emotional problems in relation to:		N	Mean Rank	H	p
Time of the hearing loss to the diagnosis of the PBA	6 months	3	32.88	17.484	0.002
	6mon.-1year	2	14.54		
	1-2 year	5	33.43		
	2-4 year	10	36.75		
	4 and more years	43	46.44		
Degree of hearing loss	mild	13	29.08	12.779	0.012
	moderate	18	41.67		
	mod.-severe	24	24.54		
	severe	6	31.33		
	very severe	2	55.50		
Age group	56-70	33	28.92	1.978	0.160
	71-85 years	30	35.38		
Use a hearing aid regularly	no	32	40.77	13.281	0.000
	yes	31	24.03		

Due to the postponement of auditory rehabilitation, socio-emotional problems that can appear in persons with the PBA are:

- Mocking of people, which is why the participants may feel anxious, frustrated, disgraced, even depressed;
- Lack of understanding of the environment with the kind problems elderly persons with the PBA are faced with may lead them to confusion, self-accusations and diminished self-esteem;
- Negative reactions of the environment causes discomfort in participants, who react by reclusion and self-isolation, concealment of hearing loss and depressive behavior.

Research results indicate that persons with higher degree of hearing loss are prone not to say that they haven't heard the collocutor's message, avoid unknown people and/or declare that hearing loss have disturbed the quality of their lives, rather than persons with mild hearing loss.

Also, persons who do not carry a hearing aid regularly often avoid unknown due to the fear that they won't understand them, omit to say that they haven't heard a message, that they lack the help of professional people, and that because of that they are dissatisfied with the quality of life.

## DISCUSSION

Elderly people often do not recognize and/or do not acknowledge a hearing problem. Our research results demonstrate that almost 2/3 of the sample loses 4-8 years until they turn for professional help, and researches conducted in USA and Australia indicate that elderly people with hearing loss wait 6-10 years before they seek help (9, 10). Organized detection of hearing loss in elderly people by means of screening should prevent waste of time, further hearing deterioration, education and timely auditory rehabilitation and getting used to a hearing aid. It is recommended that patients with more than 55 years should be provided hearing testing every year and realization of information on advantages of auditory rehabilitation and usage of hearing aids and other assistive devices (11).

In addition to delaying auditory rehabilitation, it is established that non-usage of a hearing aid occurs in more than half of the participants, who are partially or completely dissatisfied with the amplification. Recent researches confirm that many elderly people experience significant difficulties with hearing aids, especially with their performances in cases of different acoustic environments, comfort, appearance and price (12, 13, 14).

The next reason for non-usage of a hearing aid is it being non comfortable (15, 13). Adult persons who are concerned with their appearance now can use a less noticeable or invisible in-canal models in diverse colors which are closer to the individual skin color of its user.

Besides the denial or under appreciation of hearing loss and lack of information on advantages of hearing aids, in earlier phase of hearing loss, elderly people mentioned costs i.e. the price of a hearing aid which is not attainable.

Research results indicate that elderly people are afraid of negative reactions of their environment because of which they feel anxious, frustrated, ashamed and depressed. Such states lead to social isolation, socio-emotional and cognitive deterioration of the elderly with hearing loss, who are becoming increasingly dependent on family members and society.

## CONCLUSIONS

Despite scientific evidence on the existence of the direct influence of auditory rehabilitation and usage of hearing aids by elderly people with hearing loss on socio/emotional problems, the data our research show that they are still rarely used regularly. Despite scientific evidence on the existence of the direct influence of auditory rehabilitation and usage of hearing aids by elderly people with hearing loss on the improvement of the socio-emotional status, the data from practice show that they are still rarely used regularly. Rehabilitation programs should be supported by the family members, friends or staff at the nursing home, and the support of their peers and socialization is indicated as a significant aspect of rehabilitation.

## APPENDIX

### APPENDIX 1.

#### Questionnaire for the analysis of satisfaction with a hearing aid and socio-emotional problems

	Mean	SD
<b>A self-assessed hearing aid (6 items)</b>	<b>12.81</b>	<b>3.818</b>
How long ago have you noticed that you are hard of hearing?	4.40	1.086
Did the doctor recommend a hearing aid immediately?	1.89	1.002
Do you wear your hearing aid regularly?	1.98	1.008
Are you satisfied with your hearing aid?	2.02	0.813
Do you lack professional assistance?	1.86	0.998
Who financed your hearing aid?	2.71	0.771
<b>Socio-emotional problems (9 items)</b>	<b>18.65</b>	<b>6.094</b>
Are people from your environment mocking you because of your hearing loss?	2.11	1.002
Whether your environment has an understanding for your problem?	2.27	0.971
Does it happen that you are ashamed and embarrassed because of the manner your environment reacts to your problem?	1.95	1.007
Do you try to hide that you are hard of hearing?	2.21	0.986
Are you sometimes uncomfortable to ask your interlocutor to repeat the question that you haven't understood?	1.92	1.005
Do you sometimes omit to say your interlocutor that you haven't heard and understood?	1.70	0.961
Do you avoid situations where there will be unknown people because you are afraid that you'll have a communication problem?	1.79	0.986
Are you occasionally desperate or depressed because you are hard of hearing?	1.35	0.765
Have your hearing loss disturbed the quality of your life	1.46	0.820

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