KBB Uygulamaları 2024;12(3):97-106

Original Article / *Özgün Makale*

OPEN ACCESS

The impact of device satisfaction on family quality of life in hearing aid users

İşitme cihazı kullanıcılarında cihaz memnuniyetinin aile yaşam kalitesine etkisi

Merve Özdemir[1], Hülya Göçmenler[2], Şengül Terlemez[3]

[1]*Audiology Programme, Graduate Education Institute, İstanbul Aydın University, İstanbul, Türkiye*
[2]*Department of Audiology, Faculty of Health Sciences, İstanbul Medeniyet University, İstanbul, Türkiye*
[3]*Department of Audiology, Faculty of Health Sciences, İstanbul Aydın University, İstanbul, Türkiye*

ABSTRACT

Objectives: This study aimed to evaluate device satisfaction in individuals with hearing loss and examine the impact on their family members' quality of life.

Patients and Methods: The clinical study involved a total of 110 participants between April 2023 and June 2023. Of these, 55 (30 males, 25 females; mean age: 21.6±4.6 years; range, 18 to 24 years) were hearing aid users, and 55 females (mean age: 42.1±4 years; range, 35 to 50 years) were family members of these individuals. The Satisfaction with Amplification in Daily Living questionnaire was used to assess hearing aid satisfaction, and the Beach Center Family Quality of Life Scale was administered to the family members of hearing-impaired individuals.

Results: A statistically significant difference was found in the subdimension scores of Personal Image and Appearance according to the participants' sex ($p<0.05$). There was a statistically significant positive correlation between the ages of hearing-impaired individuals and the scores of the Financial/Physical/Material Sufficiency subdimensions ($r=0.271$, $p<0.05$). The participants' Positive Effect scores showed a statistically significant and positive relationship with Beach Center Family Quality of Life Scale ($r=0.440$; $p<0.01$), Family Interaction ($r=0.455$; $p<0.01$) Emotional well being ($r=0.297$; $p<0.05$), and Financial/Physical/Material well being ($r=0.293$; $p<0.05$) scores. There was a statistically significant positive correlation between the ages of hearing-impaired individuals and the scores of the Financial/Physical/Material well being subdimensions ($r=0.271$, $p<0.05$).

Conclusion: Personal characteristics, such as age and sex, along with the duration of hearing aid use, significantly influence the satisfaction with hearing aids and the quality of life for the family members of individuals with hearing loss.

Keywords: Hearing aid, hearing loss, quality of life.

ÖZ

Amaç: Bu çalışmada, işitme kayıplı bireylerde cihaz memnuniyeti değerlendirildi ve aile üyelerinin yaşam kalitesine etkisi incelendi.

Hastalar ve Yöntemler: Bu klinik çalışmaya Nisan 2023 - Haziran 2023 tarihleri arasında toplam 110 katılımcı dahil edildi. Bunlardan 55'i (30 erkek, 25 kadın; ort. yaş: 21.6±4.6 yıl; dağılım, 18-24 yıl) işitme cihazı kullanıcısı ve 55'i (ort. yaş: 42.1±4 yıl; dağılım, 35-50 yıl) bu bireylerin kadın aile üyeleriydi. İşitme cihazı memnuniyeti değerlendirmek için Günlük Hayatta Sesi Artırma Memnuniyeti anketi kullanıldı ve işitme kayıplı bireylerin aile bireylerine Beach Center Aile Yaşam Kalitesi Ölçeği uygulandı.

Bulgular: Katılımcıların cinsiyetlerine göre Kişisel İmaj ve Görünüm alt boyut puanları arasında istatistiksel olarak anlamlı bir fark olduğu bulundu ($p<0.05$). İşitme kayıplı bireylerin yaşları ile Finansal/Fiziksel/Materyal Yeterlilik alt boyut puanları arasında istatistiksel olarak anlamlı pozitif bir ilişki bulundu ($r=0.271$; $p<0.05$). Katılımcıların Olumlu Etki puanları ile Beach Center Aile Yaşam Kalitesi Ölçeği ($r=0,440$; $p<0,01$), Aile Etkileşimi ($r=0,455$; $p<0,01$), Duygusal Yeterlilik ($r=0.297$; $p<0.05$) ve Finansal/Fiziksel/Materyal Yeterlilik puanları ($r=0.293$; $p<0.05$) arasında istatistiksel olarak anlamlı pozitif bir ilişki olduğu bulundu. İşitme kayıplı bireylerin yaşları ile Finansal/Fiziksel/Materyal Yeterlilik puanları arasında istatistiksel olarak anlamlı ve pozitif bir ilişki olduğu bulundu. ($r=0.271$, $p<0.05$).

Sonuç: İşitme cihazı kullanım süresi ile birlikte yaş ve cinsiyet gibi kişisel özellikleri, işitme cihazı memnuniyetini ve işitme kaybı olan bireylerin işitme cihazlarından memnuniyetini ve aile üyelerinin yaşam kalitesini önemli ölçüde etkilemektedir.

Anahtar sözcükler: İşitme cihazı, işitme kaybı, yaşam kalitesi.

Received: August 04, 2024
Accepted: August 10, 2024
Published online: October 01, 2024

Correspondence: Merve Özdemir, MSc.
E-mail: mervesakallii18@gmail.com

Doi: 10.5606/kbbu.2024.98159

Citation:
Özdemir M, Göçmenler H, Terlemez Ş. The impact of device satisfaction on family quality of life in hearing aid users. KBB Uygulamaları 2024;12(3):97-106. doi: 10.5606/kbbu.2024.98159.

According to the World Health Organization, more than 430 million people have hearing loss, and according to their World Report on Hearing, people with hearing damage make up more than 6% of the world's population. Approximately 34 million of these individuals are estimated to be children.[1] A baby's language development is very rapid in the first few years of life, particularly in the first few months. A baby's normal hearing during early childhood is also important for mental, social, and emotional development, along with language development.[2] Hearing loss begins in early childhood and negatively affects speech and language development.[3] Issues with speech recognition and language acquisition pose a risk to patients' daily lives, as hearing loss can lead to social isolation, a lack of self-confidence, and a decline in quality of life (QoL) when not treated.[4] Individuals affected by hearing loss are able to continue their daily lives seamlessly with the support of hearing aids or cochlear implants.[5] Hearing aids, cochlear implants, and auxiliary listening devices are used for hearing loss rehabilitation. Factors that influence the outcome of hearing rehabilitation are parental education, parental involvement, age of diagnosis and equipment, and the quality of the hearing aids.[6] The primary purpose of hearing aids is to score high on speech discrimination tests. However, hearing measurements are insufficient to reveal the benefits of this device and the satisfaction of individuals. In this case, the use of survey methods to measure user satisfaction with the hearing aid is beneficial to users.[7] Numerous surveys and scales have been developed in recent years to demonstrate the effects of hearing aid use in the field of audiology. These inventories allow the evaluation of the transition to hearing aid use. Many satisfaction surveys, such as Satisfaction with Amplification in Daily Life (SADL), Abbreviated Profile of Hearing Aid Benefit, Client Oriented Scale of Improvement, and the International Outcome Inventory for Hearing Aids, can be used to assess the satisfaction of individuals with the device.[8]

Hearing aid satisfaction affects not only a person's life but also their immediate surroundings. The difficulties encountered by any member of the family system affect the whole family. Persistent and unchanging challenges affect the entire environment socially, physically, and emotionally. The family is one of the most advanced sociological systems.[9] The presence of a disabled person in the family also affects the QoL of the family; the problems that the individual is experiencing also create many psychological, economic, physical, and social issues for family members.[10]

Quality of life is a term that defines being happy and satisfied with life in a general sense.[11] The quality of family life can be defined as the pleasure of creating conditions that meet the needs of the family, being able to do what is important to them, and living together as a family.[12] For families with a child with a developmental impairment within the family, the basic sub-areas of the family's QoL can be classified as family interaction, emotional capacity, parenting, and economic/physical/material capacity.[13] Some of the scales used to measure and evaluate QoL in our country are the 36-item Short-Form Health Survey, World Health Organization Quality of Life Disabilities Module, World Health Organization Quality of Life Assessment, and KINDL (Kinder Lebensqualität Fragebogen).[14] Furthermore, the Beach Center Family Quality of Life Scale (FQOL) measures family life services in the field of developmental disabilities.[12] The Turkish adaptation provides the intermediary feature of the first information included in validity and reliability studies.[15]

These scales are used to provide comprehensive information about individuals' health conditions and QoL. There is growing interest in the effects of hearing loss on QoL. Given that people with hearing loss face many challenges in terms of education, medical and rehabilitation care, work aids, and productivity, the motivation for these individuals to study their QoL has become more intense in recent years. Hearing loss affects the QoL of individuals as well as their families. The aim of this study was to assess the satisfaction of hearing aids among individuals with hearing loss and to study the impact of that satisfaction on the QoL of their family.[16]

PATIENTS AND METHODS

The clinical study was conducted with a total of 110 individuals at the four different hearing centers (İstanbul, Muğla province) between April 2023 and June 2023. Of these participants, 55 (30 males, 25 females; mean age: 21.6±4.6 years; range, 18 to 24 years) were individuals with hearing aids and 55 females (mean age: 42.1±4 years; range, 35 to 50 years) were family members of these individuals. The inclusion criteria were being aged between 18 and 24 years, having hearing loss, and use of a unilateral or bilateral hearing aid. The exclusion criteria were use of a unilateral or bilateral cochlear implant and additional psychological or physiological impairment in addition to hearing impairment. The study was approved by the Clinical Research Ethics Board of the Faculty of Medicine of Uludağ University on April 11, 2023 (decision protocol

number: 2023-7/47; no: 2011-KAEK-26/258). Written informed consent was obtained from all participants. The study was conducted in accordance with the Declaration of Helsinki.

The data for this study were collected from face-to-face interviews with hearing aid users and their families. This study consisted of three stages. In the first phase, permits were obtained from the institutions concerned. The second stage was the implementation of the SADL survey in individuals with hearing aid. The third step was to apply the FQOL to family members. The SADL survey was subsequently grouped and evaluated according to the characteristics described on the second page of the survey (hearing difficulty level, lifelong hearing aid experience, and daily hearing aid use). The level of hearing difficulties of participants was classified by the researcher on the basis of the evaluation of the air and bone tract membranes in hearing tests carried out by the responsible audiologists at different hearing aid centers.

The SADL survey consists of 15 questions. There are four subscales in this survey. These are grouped into positive effects, negative features, personal image, service, and cost. According to this grouping, the SADL survey question distribution is shown in Figure 1. In every question a hearing aid user replies to in the SADL survey, their opinion of hearing aids is rated as "not at all," "a little," "somewhat," "medium," "considerably," "greatly," and "tremendously." The SADL survey is useful for clinical application because the survey has its own scale, and the satisfaction of the individual can be scored. A factor analysis was carried out to determine the subscales of 15 issues. The positive effect from the survey's bottom scale, the trial satisfaction analysis, revealed a psychological satisfaction component, as well as satisfaction with improved communication and natural sound quality.[17] The validity and reliability study of the SADL questionnaire was conducted by Meltem Genç and the Turkish version of the SADL scale, the SADL-TR scale, was used in this study.

The FQOL has 25 questions and answers to measure the QoL of families with children with developmental disabilities. In FQOL, questions related to the subfields of "Family Interaction (6 questions)", "Parenting (6 questions)", "Emotional well being (4 questions)", "Financial / Physical/Material well being (5 questions)" and "Support for Disability (4 questions)" are presented in the whole and sub-dimensions of family QoL. The classification of these questions is shown in Figure 2. The answer to each question answered by the participant was evaluated as "not at all appropriate," "not appropriate," "neither appropriate nor not appropriate," "appropriate," and "completely appropriate." The maximum score for the entire FQOL is 125 points, and the minimum score is 25 points. High scores indicate a high level of awareness about the quality of family life, while low scores show a low level.[15]

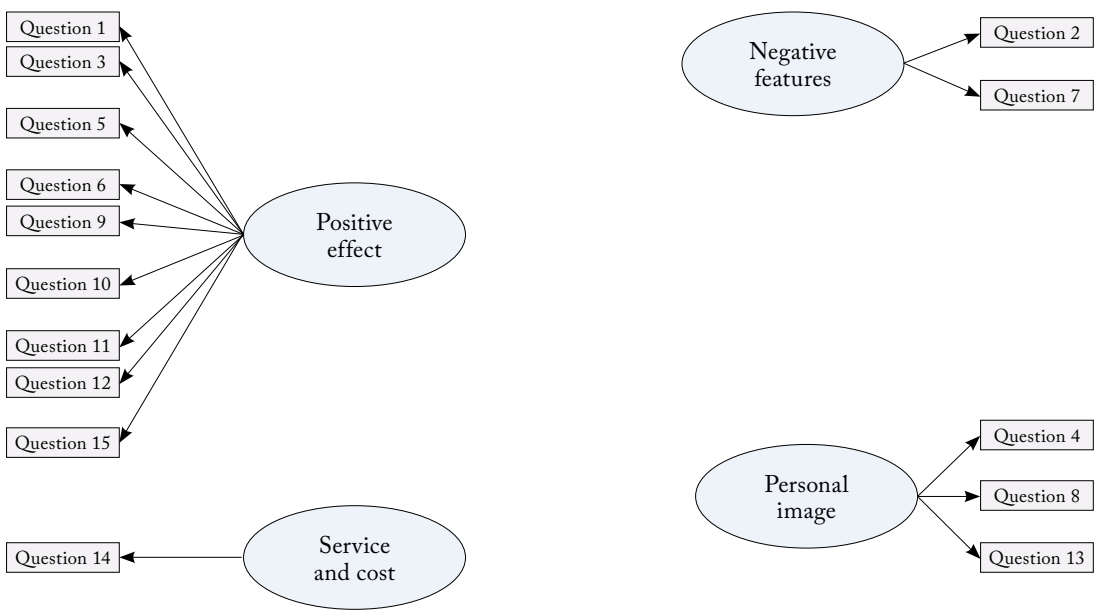

Figure 1. SADL-TR Survey Question Distribution.
SADL: Satisfaction with Amplification in Daily Living.

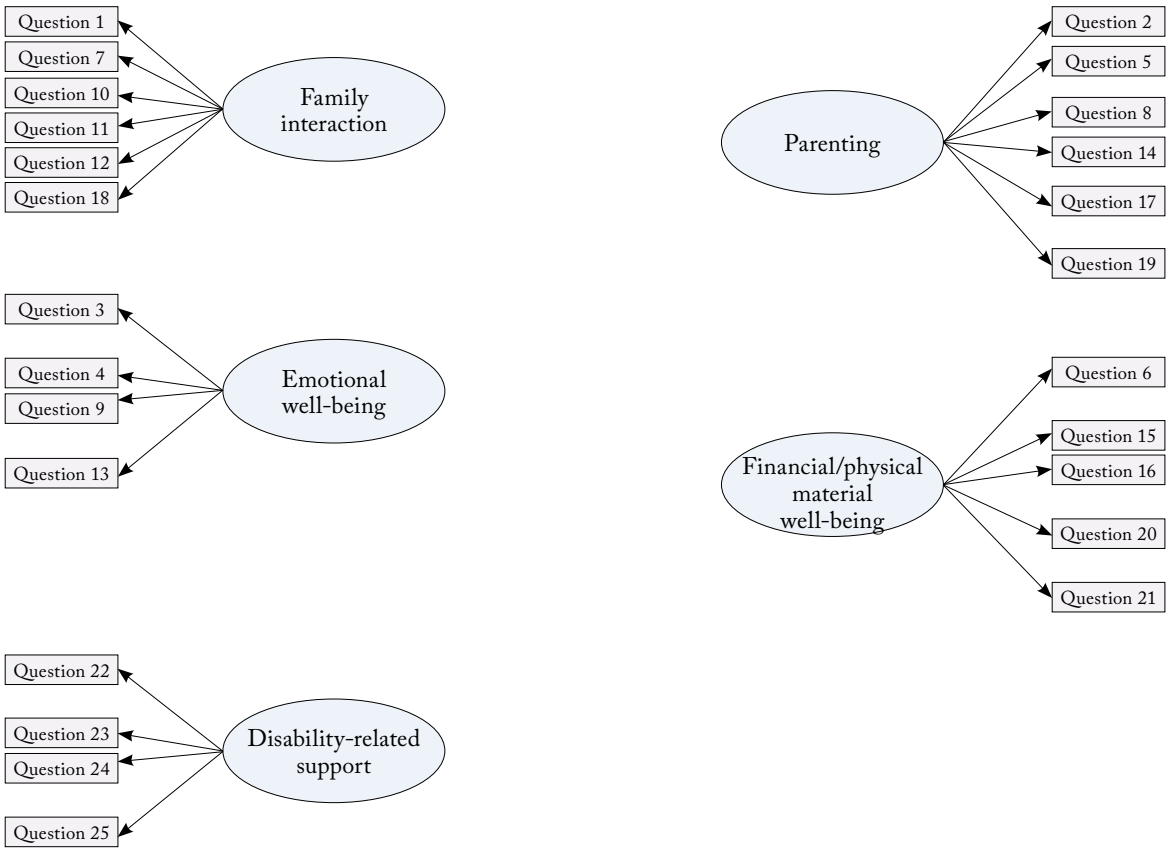

Figure 2. Beach Center Family Quality of Life Question Distribution.

Statistical analysis

This study used the G*Power version 3.1.9.2 (Heinrich-Heine-Universität Düsseldorf, Düsseldorf, Germany) and calculated the sample size with 95% confidence before data collection. The minimum number of samples required for the independent sample t-test was calculated as 110, with an alpha of 0.05, effect size of 0.543, and theoretical strength of 80%.

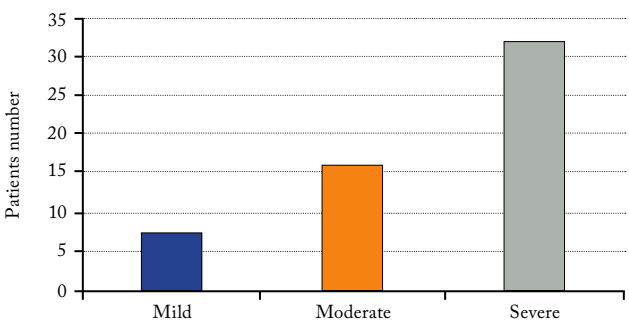

Figure 3. Degree of the hearing loss.

The data obtained from the study were analyzed using IBM SPSS version 25.0 software (IBM Corp., Armonk, NY, USA). The data were evaluated using defined statistical methods (frequency, percentage, min-max values, mean ± standard deviation [SD]). A confidence analysis was carried out to test the reliability of scales. Pearson correlation was applied to test the relationship between numerical variables in data with a normal distribution.[18] The Mann-Whitney U test was used to compare the differences between the two independent groups. A p-value <0.05 was considered statistically significant.

RESULTS

The distribution of the degree of hearing loss is presented in Figure 3, while hearing aid experiences are presented in Figure 4. Seven of the individuals involved in the study had mild hearing loss, 16 had moderate hearing loss, and 32 had severe hearing loss.

The data on the SADL scale, FQOL, and their subdimensions are given in Table 1. A comparison of the global SADL score and subdimensions of the

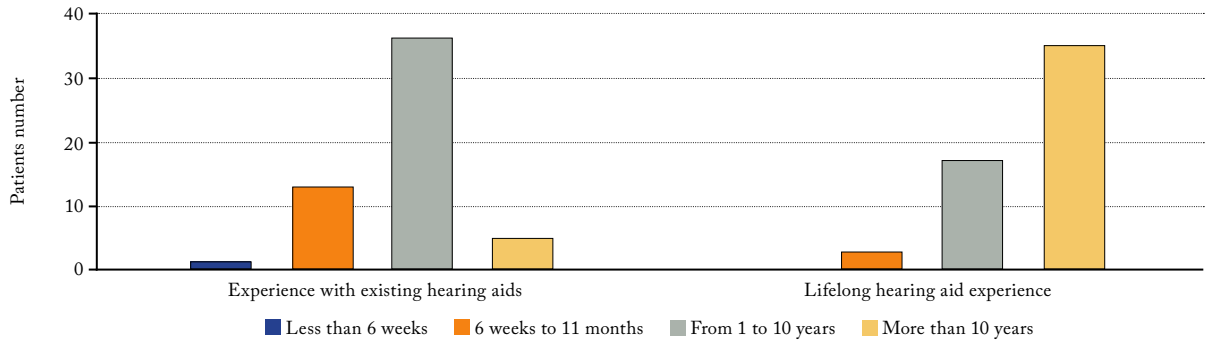

Figure 4. Hearing aid experience.

Table 1
Descriptive statistics of the scales used in the research

Scales and dimensions	Mean±SD	Median	Min-Max
Global SADL	55.55±9.46	57.14	27.38-76.59
Positive effect	75.64±13.73	74.60	38.10-98.41
Personal image	50.22±16.44	47.62	14.29-90.48
Negative features	56.88±23.89	57.14	14.29-100.00
Service and cost	39.48±26.22	28.57	14.29-100.00
Beach center family	102.49±12.25	103.00	75.00-125.00
Quality of life scale			
Family interaction	25.31±3.35	25.00	17.00-30.00
Parenting	25.00±3.20	24.00	19.00-30.00
Emotional well-being	15.07±2.98	15.00	9.00-20.00
Financial/physical/material well-being	20.42±3.57	20.00	12.00-25.00
Disability-related support	16.69±2.21	16.00	11.00-20.00

SD: Standard deviation; SADL: Satisfaction with Amplification in Daily Living.

scale according to the participants' characteristics (sex, hearing aid experience, daily hearing aid use) is given in Table 2. Accordingly, there was a statistically significant difference between the subdimension scores of Personal Image by sex ($p<0.05$). Male participants had higher Personal Image scores compared to female participants ($p=0.030$).

There was no statistically significant difference between the FQOL total score and subdimension scores according to the participants' sex, experience with existing hearing aids, lifetime experience with hearing aids, and daily hearing aid use ($p>0.05$; Table 3).

The FQOL and SADL subdimensions of Positive Effect ($r=0.440$; $p<0.01$), Family Interaction ($r=0.455$; $p<0.01$), Parenting ($r=0.489$; $p<0.01$), Emotional well being ($r=0.297$; $p<0.05$), and Financial/Physical/Material well being ($r=0.293$; $p<0.05$) had a statistically significant and positive relationship (Table 4). The FQOL and SADL subdimensions of Negative Features ($r=-0.389$; $p<0.01$), Family Interaction ($r=-0.404$; $p<0.01$), Parenting scores ($r=-0.404$; $p<0.01$), and Emotional well being scores ($r=-0.316$; $p<0.01$) had a statistically significant and negative correlation.

DISCUSSION

This study evaluated hearing aid satisfaction in individuals with hearing loss and the impact of that satisfaction on the QoL of family members. In this context, sex, total hearing aid experience, and the impact of daily hearing aid experience on device satisfaction and family QoL were examined. The participants'

Table 2
Comparison of SADL TR scale subdimension based on participants' characteristics

Variables	Global SADL Mean±SD	Positive effect Mean±SD	Personal image Mean±SD	Negative features Mean±SD	Service and cost Mean±SD
Sex					
Female	55.48±8.91	79.56±9.60	44.95±15.74	57.43±24.26	40.00±25.08
Male	55.61±10.05	72.38±15.83	54.60±15.95	56.43±23.97	39.05±27.55
Test value	–0.051	–1.769	–2.176	–0.238	–0.313
p	0.960	0.077	0.030*	0.812	0.754
Experience with existing hearing aids					
Less than 11 months	54.91±8.37	81.75±13.13	46.60±14.25	53.57±20.35	37.76±28.35
More than 1 year	55.77±9.89	73.56±13.46	51.45±17.11	58.01±25.11	40.07±25.80
Test value	–0.289	–1.770	–0.806	–0.573	–0.566
p	0.773	0.077	0.420	0.567	0.571
Lifelong hearing aid experience					
1 year to 10 years	53.81±10.64	72.30±14.11	47.62±19.36	61.79±21.65	33.57±23.76
More than 10 years	56.54±8.73	77.55±13.34	51.70±14.62	54.08±24.94	42.86±27.28
Test value	–1.029	–1.165	–0.642	–1.135	–1.259
p	0.308	0.244	0.521	0.257	0.208
Daily hearing aid use					
Up to 1-8 hours every day	49.96±13.08	66.98±18.69	45.71±20.37	52.86±21.19	34.29±37.25
Up to 8-16 hours a day	56.11±9.01	76.51±13.07	50.67±16.18	57.29±24.30	40.00±25.33
Test value	–1.398	–1.378	–0.250	–0.324	–1.024
p	0.168	0.168	0.802	0.746	0.306

SD: Standard deviation; SADL: Satisfaction with Amplification in Daily Living.

overall device satisfaction (total SADL score) was compared with the total family QoL score. Finally, the participants' SADL subscale scores, which assess hearing aid satisfaction, and FQOL scores were compared.

Accordingly, given the impact of sex, total hearing aid experience, and daily hearing aid experience on hearing device satisfaction, there was a statistically significant difference between the Personal Image subdimension scores based solely on sex. Male participants had higher Personal Image scores compared to female participants. Studies on similar subjects in the literature state that there is no sex difference in hearing aid satisfaction.[19-21] In this study, no relationship was found between the participants' sex, total hearing aid experience, daily hearing aid experience, and the QoL of family members. This finding suggests that the sex of the individuals using hearing aids, the total device experience, and the daily device experience do not affect the family members' QoL. Unlike this finding, Frank and Timmer[21] stated that the opinions of family members are important when making decisions about using hearing aids. To improve the adoption and efficient use of hearing aids and, eventually, improve the QoL for families, attitudes and external circumstances must be taken to account. Our results may vary due to an insufficient number of participants.

A statistically significant and positive correlation was identified between the SADL Positive Effect subscale scores and the Family Interaction, Parenting, Emotional Well-Being, and Physical Well-Being scores, which are the subdimension of the FQOL. This finding shows that satisfaction with hearing aids has a positive effect on the QoL of the device user's family members (excluding the Disability-Related Support parameter) in terms of family interaction, parenting, and emotional and financial well-being. Similar studies in literature support this finding. For example, provision of personal amplification can reduce the difficulties not only for the hearing-impaired person but also for significant others. Therefore, the benefits of hearing aid provision extend

Table 3
Comparison of the Beach Center Family Quality of Life scale total score and scale sub-dimensions according to the characteristics of the participants

Variables	Beach Center Family Quality of Life Scale Mean±SD	Family interaction Mean±SD	Parenting Mean±SD	Emotional well-being Mean±SD	Financial/physical/material well-being Mean±SD	Disability-related support Mean±SD
Sex						
Female	103.32±10.17	25.60±3.07	25.64±2.87	15.20±2.72	20.28±3.25	16.60±2.24
Male	101.80±13.88	25.07±3.60	24.47±3.40	14.97±3.22	20.53±3.88	16.77±2.22
Test value	–0.482	–0.621	–1.503	–0.170	–0.462	–00.026
p	0.630	0.535	0.133	0.865	0.644	0.979
Experience with existing hearing aids						
Less than 11 months	100.79±14.94	24.79±3.60	25.50±3 .55	13.79±3.56	20.29±3.75	16.43±2.44
More than 1 year	103.07±11.34	25.49±3.29	24.83±3.10	15.51±2.67	20.46±3.56	16.78±2.15
Test value	–0.706	–0.603	–0.430	–1.861	–0.333	–0.796
p	0.480	0.547	0.668	0.063	0.739	0.426
Lifetime hearing aid experience						
From 1 year to 10 years	100.90±12.65	2 4.95±3.00	24.80±3.11	14.95±2.93	20.05±3.80	16.15±2.06
More than 10 years	103.40±12.11	25.51±3.56	25.11±3.29	15.14±3.05	20.63±3.47	17.00±2.26
Test value	–1.007	–1.083	–0.548	–0.212	–0.576	–1.584
p	0.314	0.279	0.584	0.832	0.565	0.113
Daily use of hearing aids						
About 1-8 hours every day	97.00±9.35	23.40±2.07	24.80±3.03	13.80±2.17	18.60±2.61	16.40±2.30
About 8-16 hours every day	103.04±12.44	25.50±3.41	25.02±3.24	15.20±3.04	20.60±3.63	16.72±2.22
Test value	–0.952	–1.562	–0.311	–1.077	–1.482	–0.521
p	0.341	0.118	0.756	0.281	0.138	0.602

SD: Standard deviation.

Table 4
Interdimensional correlations

Scale and dimensions		1	2	3	4	5	6	7	8	9	10	11
1- Global SADL	r	1										
	p											
1.2. Positive effect	r	0.448**	1									
	p	0.001										
1.3. Personal image	r	0.501**	0.117	1								
	p	0.000	0.396									
1.4. Negative features	r	0.263	-0.374**	-0.022	1							
	p	0.052	0.005	0.872								
1.5. Services and cost	r	0.656**	0.390**	0.056	-0.321*	1						
	p	0.000	0.003	0.686	0.017							
2- Beach Center Family Quality of Life Scale	r	0.011	0.440**	-0.104	-0.389**	0.205	1					
	p	0.935	0.001	0.451	0.003	0.132						
2.1. Family interaction	r	-0.009	0.455**	0.017	-0.404**	0.105	0.808**	1				
	p	0.946	0.000	0.901	0.002	0.443	0.000					
2.2. Parenting	r	-0.104	0.489**	-0.188	-0.404**	0.079	0.853**	0.780**	1			
	p	0.449	0.000	0.170	0.002	0.567	0.000	0.000				
2.3. Emotional well-being	r	-0.024	0.297*	-0.132	-0.316*	0.179	0.855**	0.643**	0.672**	1		
	p	0.859	0.028	0.338	0.019	0.190	0.000	0.000	0.000			
2.4. Financial/physical/ material well-being	r	0.150	0.293*	-0.004	-0.208	0.255	0.773**	0.357**	0.491**	0.606**	1	
	p	0.273	0.030	0.978	0.128	0.060	0.000	0.007	0.000	0.000		
2.5. Disability-related support	r	0.017	0.167	-0.145	-0.199	0.210	0.680**	0.391**	0.398**	0.465**	0.601**	1
	p	0.902	0.224	0.291	0.144	0.124	0.000	0.003	0.003	0.000	0.000	

beyond the hearing-impaired person and encompass significant others, close family, and friends. Involving family members and addressing self-reported hearing disability are crucial for improving family satisfaction with hearing aids.[21,22]

A statistically significant and negative correlation was found between the participants' Negative Feature scores, a SADL subscale, and their family members' Family Interaction score, Parenting score, and Emotional Well-Being score. This finding suggests that the less satisfaction with the hearing aid, the greater family interaction, perception of parenting, and perceptions of the family's emotional well-being. Individuals may allocate more time to their family rather than their social surroundings when they have hearing difficulties, discomfort from the device, particularly find themselves in a noisy area. By fostering more engagement within the family, this can help with the need for socialization and communication. However, the perception of parenting and responsibility for children in hearing impaired families may be greater than in families with normal hearing. The fact that their children have hearing loss may cause families to be psychologically sensitive and to have a protective and anxious attitude towards their children. Therefore, parents of hearing-impaired children can be more inclusive and responsible, particularly when they are not happy with their children's devices. This finding is similar to experiences described by Spanish-speaking parents of young children, who expressed concern about others seeing their child wearing hearing aids, and this distressing thought may interfere with hearing aid use.[23] Internal barriers can persist when they are not addressed.[23]

As a result, the factors that affect the QoL of people with hearing loss are satisfaction with the hearing aids, the appearance of the hearing aid, personal image perception, and the cost of hearing solutions. Studies have shown that assessing the QoL on a single total score is insufficient to explain the condition of individuals. Therefore, our study has an inherent value in that hearing loss was evaluated separately and in detail using the subparameters that affect device satisfaction in people with hearing loss. Another factor that affects hearing loss is the QoL of the family members. Within the framework of the social communications network, relatives are the primary individuals experiencing the process of disability alongside those with hearing loss, which can affect their QoL. Within this framework, it is important to study the impact on family members , as it is not sufficient to only study the QoL of individuals with hearing loss. In this study, patients with hearing loss were studied in depth on device satisfaction and subparameters affecting the QoL in their families. Our results show that the device satisfaction of individuals with hearing loss directly affects the QoL of their family members.

This study had some limitations. One member from each family and 55 people with hearing loss from different cities and hearing centres were included in our study. Our study comprises a varied population since these individuals take and adapt hearing aids differently. The findings can be generalized by increasing the sample size. Our study assessed hearing aid satisfaction and family life quality. The SADL-TR questionnaire and open-ended evaluations can classify hearing loss and rate hearing aid satisfaction. This assesses hearing-impaired people's and their families' QoL.

In conclusion, the device satisfaction of people with hearing loss directly affects the QoL of their families.

Data Sharing Statement: The data that support the findings of this study are available from the corresponding author upon reasonable request.

Author Contributions: Data collection, analysis and interpretation, literature review, writing: M.Ö.; Idea, design, control/supervision, analysis and interpretation, critical review: H.G., Ş.T.

Conflict of Interest: The authors declared no conflicts of interest with respect to the authorship and/or publication of this article.

Funding: The authors received no financial support for the research and/or authorship of this article.

REFERENCES

1. World Health Organization. Launch of the World Report on Hearing [online]. Available at: https://www.who.int/healthtopics/hearing-loss#tab=tab_2 [Accessed: 26.05.2023]
2. Genç GA, Ertürk BB, Belgin E. Yenidoğan işitme taraması: Başlangıçtan günümüze. Çocuk Sağlığı ve Hastalıkları Dergisi 2005;48:109-18.
3. Küçüköner A, Küçüköner Ö. Yenidoğan işitme taraması ve erken tanı. Journal of Medical Sciences 2022;Özel Sayı 1:20-3. doi: 10.46629/JMS.2022.70
4. Ahmad WAS. Satisfactıon with Amplification in Daily Life (SADL) in monaural and binaural hearing aid users. Inter J All Heal Sci [Internet] 2020;4:1240-4.
5. Beyazıt B. Postlingual koklear implant hastalarının yaşam kalitesinin değerlendirilmesi. [Yüksek Lisans Tezi]. Ankara: Gazi Üniversitesi Sağlık Bilimleri Enstitüsü Kulak Burun Boğaz Hastalıkları Anabilim Dalı Odyoloji, Konuşma ve Ses Bozuklukları Programı; 2013.
6. Niemensivu R, Roine RP, Sintonen H, Kentala E. Health-related quality of life in hearing-impaired adolescents and children. Acta Otolaryngol 2018;138:652-8. doi: 10.1080/00016489.2018.1438661.

7. Yiğit Ö, Kılıç S. İşitme cihazi memnuniyetinde cihaz kullanim süresinin rolü. Hacettepe University Faculty of Health Sciences Journal 2019;6:243-53. doi: 10.21020/husbfd.647854
8. Kırkım G, Şerbetçioğlu MB, Mutlu B. Uluslararası işitme cihazları değerlendirme envanteri Türkçe versiyonu kullanılarak hastalardaki işitme cihazı memnuniyetinin değerlendirilmesi. KBB ve BBC Dergisi 2008;16:101-7.
9. Aktaş E. Fiziksel engelli çocuk ve ailesinin evde bakım gereksinimine karşı ışık tutucu araştırmaların sistematik incelenmesi [Yüksek Lisans Tezi]. İstanbul: Marmara Üniversitesi/Sağlık Bilimleri Enstitüsü/Çocuk Sağlığı ve Hastalıkları Hemşireliği Anabilim Dalı; 2010.
10. Tanrıkulu S. Evinde bir aile üyesine bakım veren kadınların bakım verme yüklerinin incelenmesi [Yüksek Lisans Tezi]. Ankara: Başkent Üniversitesi/Sosyal Bilimler Enstitüsü/Sosyal Hizmet Anabilim Dalı; 2019.
11. Eser E. Sağlıkla ilgili yaşam kalitesinin kavramsal temelleri ve ölçümü. Sağlıkta Birikim 2006;1:1-5.
12. Park J, Hoffman L, Marquis J, Turnbull AP, Poston D, Mannan H, et al. Toward assessing family outcomes of service delivery: Validation of a family quality of life survey. J Intellect Disabil Res 2003;47:367-84. doi: 10.1046/j.1365-2788.2003.00497.x.
13. Hoffman L, Marquis, J, Poston, D, Summers JA, Turnbull A. Assessing family outcomes: Psychometric evaluation of the beach center family quality of life scale. Journal of Marriage and Family 2006;68:1069-83. doi: 10.1111/j.1741-3737.2006.00314.x
14. Öztürk S. İşitme cihazı ve koklear implant kullanıcılarında beden algısı [Yüksek Lisans Tezi]. İstanbul: Marmara Üniversitesi Sağlık Bilimleri Enstitüsü; 2017.
15. Meral BF, Cavkaytar A. Beach center aile yaşam kalitesi ölçeğinin Türkçe uyarlama, geçerlik ve güvenirlik çalışması. Eğitim ve Bilim 2013;38:48-60.
16. Punch JL, Hitt R, Smith SW. Hearing loss and quality of life. J Commun Disord 2019;78:33-45. doi: 10.1016/j.jcomdis.2019.01.001.
17. Genç M. İşitme cihazı kullanan bireylerde günlük hayatta sesi artırma memnuniyeti anketi'nin-SADL (satisfaction with amplification in daily living)-Türkiye'de klinik güvenilirlik ve geçerliliğinin değerlendirilmesi [Yüksek Lisans Tezi]. Malatya: Turgut Özal Üniversitesi/Sağlık Bilimleri Enstitüsü/Odyoloji ve Konuşma Bozuklukları Ana Bilim Dalı; 2016.
18. Shao AT. Marketing research: An aid to decision making. Cincinnati, Ohio: South-Western/Thomson Learning; 2002.
19. Mondelli MF, Rocha AV, Honório HM. Degree of satisfaction among hearing aid users. Int Arch Otorhinolaryngol 2013;17:51-6. doi: 10.7162/S1809-97772013000100009.
20. Williams VA, Johnson CE, Danhauer JL. Hearing aid outcomes: Effects of gender and experience on patients' use and satisfaction. J Am Acad Audiol 2009;20:422-32. doi: 10.3766/jaaa.20.7.4.
21. Franks I, Timmer BHB. Reasons for the non-use of hearing aids: Perspectives of non-users, past users, and family members. Int J Audiol 2023:1-8. doi: 10.1080/14992027.2023.2270703.
22. Brooks DN, Hallam RS, Mellor PA. The effects on significant others of providing a hearing aid to the hearing-impaired partner. Br J Audiol 2001;35:165-71. doi: 10.1080/00305364.2001.11745234.
23. Muñoz K, Guillen D, Muñoz C, Twohig MP. Pediatric hearing aid management: Experiences and perspectives of Spanish-speaking parents. Am J Audiol 2023;32:812-22. doi: 10.1044/2023_AJA-23-00070.