Quality of life in patients with chronic otitis media

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Quality of life, chronic otitis media

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Abstract

Aim: The aim of this study is to investigate the patients' quality of life related to chronic otitis media (COM) symptoms by using the 36-item Short-Form Health Survey (SF-36).

Methods: Fifty patients with COM and 50 healthy control subjects, who were similar to the study group in terms of age, gender, education, and marital status, were included in the study. Demographical data, including age, gender, education status, and marital status of all participants, were recorded. All participants completed the SF-36 to evaluate health-related quality of life.

Results: The patients with COM reported significantly lower levels of quality of life in terms of physical functioning, physical role difficulty, vitality, social functioning, and emotional role difficulty compared to the control subjects. COM patients with hearing loss (HL) who had additional symptoms (ear discharge and/or tinnitus) reported significantly lower levels of quality of life in terms of emotional role difficulty only, whereas other measures were similar. The quality of life outcomes of COM patients according to their HL severity did not show any statistically significant difference.

Conclusion: Patients with COM seem to have a poorer quality of life, which is most probably related to hearing loss rather than accompanying and disturbing complaints such as tinnitus or ear discharge. Otorhinolaryngologists should keep in mind that these patients may need psychosocial support to improve their quality of life.

Keywords
chronic otitis media, quality of life, 36 item short form health survey

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Introduction

Chronic otitis media (COM) is defined as a chronic inflammation of the mucosa of the middle ear and/or mastoid, which affects 2% to 3% of the population. COM is a serious chronic condition characterized by many unpleasant symptoms, such as hearing impairment, ear discharge, and tinnitus. Any of these symptoms may decrease the quality of life.[1,2]

Health-related quality of life has attracted growing interest over the past 20 years. Like many other chronic disorders, COM is likely to be a factor in chronic stress and psychological problems.[3] Previously, studies focused merely on hearing loss (HL) but did not pay attention to the other symptoms of COM, although these other symptoms can also lead to psychological problems as disturbing as the hearing loss itself.[4,5]

In this study, we aimed to investigate patients' quality of life related to COM symptoms by using the 36-item Short-Form Health Survey.

Materials and Methods

Study Design

Fifty patients and 50 healthy control subjects, who were similar to the study group in terms of age, gender, education, and marital status, were included in the study. Demographical data, including age, gender, education status, and marital status of all participants, were recorded. All participants completed the Short Form-36 (SF-36) to evaluate health-related quality of life.

This study was conducted in the Mustafa Kemal University Department of Otorhinolaryngology between May 2013 and May 2014. Ethics Committee approval was obtained, and the study was conducted in accordance with the Declaration of Helsinki. An informed consent form was obtained from all participants.

Study Population

Patients presenting with symptoms of chronic otitis media for more than three months and diagnosed with COM after a detailed otorhinolaryngologic examination were included in the study. Inclusion criteria were being over 18 years old and being able to complete the study forms. Exclusion criteria were: age below 18, inability to complete study forms, existence of psychiatric illness or use of psychiatric medication, existence of any systemic or chronic disease, history of previous ear surgery, pregnancy, and refusal to participate.

Among 123 patients with COM admitted to the ENT Department, 50 patients met the inclusion criteria and formed the study group. The control group consisted of 50 subjects who were admitted to the ENT clinic with no ear-related symptoms and proven normal hearing levels. During selection, control subjects were matched for age, gender, education, and marital status. All participants underwent a complete ENT examination and completed the SF-36.

Assessment of COM

The examination of subjects included a detailed medical history, otoscopic evaluation, and audiological assessment. Pure-tone audiometry (PTA) was performed by the same audiologist in soundproof booths for objective hearing assessment. Pure-tone air-conduction thresholds were obtained for each ear at 500, 1000, 2000, 3000, 4000, 6000, and 8000 Hz. Bone-conduction thresholds were measured at 500, 2000, and 4000 Hz.

We determined hearing impairment as the pure-tone average of audiometric hearing thresholds at 500, 1000, 2000, and 4000 Hz in the better of the two ears. We used the guidelines of the American Speech–Language–Hearing Association (ASHA) when describing the severity of hearing loss:[6]

Normal hearing: 0 to 25 dB HL
Mild hearing loss: 26 to 40 dB HL
Moderate hearing loss: 41 to 70 dB HL
Severe hearing loss: 71 to 90 dB HL
Profound hearing loss: Greater than 91 dB HL

The duration, side (unilateral or bilateral), severity, and type of auditory impairment were recorded. In addition to HL, findings of other ear symptoms associated with COM, such as ear discharge and tinnitus, were also recorded. Patients then completed the SF-36 survey.

36-Item Short Form Health Survey (SF-36)

The SF-36 is a health survey questionnaire used to assess perceived general health status. It successfully measures status in patients with medical or psychological disorders as well as healthy subjects. This tool provides scores ranging between 0 (worst health status) and 100 (best health status). The scale consists of 36 items subdivided into eight subscales: physical functioning, role-physical, bodily pain, general health, vitality, social functioning, role-emotional, and mental health.[7,8] Higher scores reflect a better quality of life.

Statistical Analysis

Statistical evaluation was carried out using SPSS version 19.0 (SPSS Inc., Chicago, IL, USA). Comparison of categorical variables was performed using the Chi-square test. The normal distribution of continuous variables in both groups was tested using the Kolmogorov-Smirnov test. For the comparison of continuous variables, the Student's t-test was used. The Mann–Whitney U test was used for the comparison of continuous variables where the data did not show a normal distribution. Correlations between study variables were calculated using Pearson's correlation coefficient. The level of statistical significance was accepted as p leq 0.05.

Results

A total of 100 subjects (66 females and 34 males) were included in the study. The mean age of the participants was 35.12 \pm 7.59 years. In the study group, there were 29 (58%) female and 21 (42%) male patients with COM. Within this group, 19 (38%) were married and 26 (52%) were single, with a mean duration of education of 7.96 \pm 1.60 years.

The control group consisted of 26 female (52%) and 24 male (48%) subjects with a mean age of 34.08 \pm 6.83 years. In the control group, 20 subjects (40%) were married and 24 (48%) were single, with a mean duration of education of 7.84 \pm 1.34 years. Both groups were statistically similar in terms of age, gender, marital status, and duration of education (p=0.473, p=0.551, p=0.826, and p=0.686, respectively).

The mean duration of COM in the study group was 7.14 \pm 3.00 years. The condition was bilateral in 29 patients (58%) and unilateral in 21 patients (42%). Thirty-seven (74%) patients reported ear discharge and/or tinnitus in addition to hearing loss (HL), while 13 (26%) patients complained only of HL without additional symptoms.

According to ASHA guidelines, 12 (24%) patients had mild HL, 21 (42%) had moderate HL, and 17 (34%) had moderately severe HL. HL was bilateral in 19 patients (58%) and unilateral in 31 patients (62%). All control

Table 1. Results of the 36-Item Short Form Health Survey (SF-36) between COM group and control group

	COM group (n=50)	Control group (n=50)	p
Physical functioning	83.12 ± 8.73	90.96 ± 8.61	0.01
Physical role difficulty	55.50 ± 17.39	87.32 ± 10.72	0.0001
Bodily pain	82.78 ±13.43	86.62 ± 13.14	0.152
General health perception	84.42 ± 6.26	82.38 ± 6.91	0.126
Vitality	81.74 ± 13.3	86.38 ± 7.16	0.033
Social functioning	58.18 ± 12.50	91.72 ± 6.36	0.0001
Emotional role difficulty	54.64 ± 10.59	94.14 ± 9.01	0.0001
Mental health	85.42 ± 10.34	85.70 ± 10.38	0.893

subjects had normal hearing as confirmed by pure-tone audiometry and reported no ear discharge or tinnitus.

Quality of Life Outcomes

Patients with COM reported significantly lower levels of quality of life compared to control subjects in the following domains (Table 1):

* Physical functioning
* Physical role difficulty
* Vitality
* Social functioning
* Emotional role difficulty

COM patients who experienced additional symptoms (ear discharge and/or tinnitus) reported significantly lower levels of quality of life specifically in terms of emotional role difficulty compared to COM patients with hearing impairment only; results for other domains were similar (Table 2).

When COM patients were grouped according to the severity of their hearing loss (mild, moderate, and severe), their quality of life outcomes did not show any statistically significant differences (Table 3).

Table 2. Results of the 36-Item Short Form Health Survey (SF-36) between COM patients with hearing impairment only and COM patients with HL having additional symptoms

	HL alone (n=13)	HL+ additional symptoms (n=37)	p
Physical functioning	84.40 ± 8.18	76.46 ± 9.54	0.079
Physical role difficulty	56.23 ± 19.24	55.24 ± 16.97	0.862
Bodily pain	83.76 ± 9.26	82.43 ± 14.71	0.761
General health perception	85.08 ± 6.43	82.53 ±5.54	0.212
Vitality	83.29 ± 8.15	77.30 ± 22.30	0.166
Social functioning	59.51 ± 12.03	54.38 ± 13.51	0.207
Emotional role difficulty	56.40 ± 9.71	49.61 ± 11.73	0.046
Mental health	85.69 ± 9.18	85.32 ± 10.83	0.913

Table 3. Results of the 36-Item Short Form Health Survey (SF-36) between COM group according to hearing loss severity

	Mild HL (n=12)	Moderate HL (n=21)	Severe HL (n=17)	p
Physical functioning	84.41 ± 9.15	82.83 ± 9.58	82.23 ± 8.19	0.749
Physical role difficulty	57.00 ± 16.50	55.71 ± 19.39	53.00± 16.05	0.834
Bodily pain	87.17 ± 8.95	81.47 ± 6.29	78.83 ± 23.77	0.221
General health perception	84.00 ± 5.64	83.42 ± 7.98	77.47 ± 19.71	0.966
Vitality	84.83 ± 8.16	83.42 ± 7.98	77.47 ± 19.71	0.261
Social functioning	61.04 ± 13.58	58.70 ± 13.41	52.41 ± 6.82	0.159
Emotional role difficulty	56.23 ± 11.64	53.91 ± 8.41	53.17 ± 10.91	0.660
Mental health	86.58 ± 9.20	86.52 ± 11.16	83.23 ± 10.29	0.573

Discussion

Health-related quality of life has gained significant interest over the last two decades. Until recently, studies assessing the quality of life for subjects with otitis media focused on tools such as the Hearing Satisfaction Scale (and its modified version), the Hearing Handicap Inventory for the Elderly, the Glasgow Benefit Inventory, and the 36-item Short-Form Health Survey (SF-36).[7,9-11]

In the present study, we used the widely recognized SF-36 tool to evaluate health-related quality of life. Our findings indicate that quality of life outcomes for patients with COM were significantly lower than control subjects in several domains:

* Physical functioning
* Physical role difficulty
* Vitality
* Social functioning
* Emotional role difficulty

Consistent with our results, Bakır et al. reported that COM patients experienced poorer physical role difficulty, general health perception, social functioning, and mental health.[12] Previous studies have suggested that Hearing Loss (HL), the primary symptom of COM, significantly impairs psychosocial functioning and overall quality of life.[3,13,14] Fellinger et al. specifically noted that physical, psychological, social, and environmental aspects of life were poorer in patients with HL compared to the general population.[15]

While many studies emphasize the impact of hearing loss, significant attention has not always been paid to other common symptoms of COM, such as ear discharge (otorrhea) and tinnitus.

In one study, patients undergoing mastoid obliteration surgery for a chronically draining cavity reported a significant improvement in quality of life post-surgery.[16] Conversely, Bakır et al. found that quality of life outcomes were similar regardless of whether additional symptoms were present.[12] Our study found that patients with these additional symptoms were similar to those without them in most categories, with one exception: emotional role difficulty. Patients with additional symptoms reported significantly lower levels of life quality in this specific domain.

Regarding the severity of the condition, Monzani et al. found that the social functioning and emotional roles of patients with mild or moderate acquired HL were poorer than controls.[17] However, Bakır et al. reported that the psychological status and quality of life of COM patients did not fluctuate based on their specific levels of HL.[12] Similarly, in our study, quality of life outcomes remained consistent across different levels of hearing loss.

The primary limitation of our study is the small sample size. We believe further detailed studies with larger cohorts will be highly beneficial to the existing literature.

Conclusion

It can be concluded that patients with Chronic Otitis Media (COM) experience a notably poorer quality of life, which appears to be more closely linked to Hearing Loss (HL) than to other accompanying symptoms like tinnitus or ear discharge.

While symptoms like ear discharge can further impact specific areas—such as emotional role difficulty—the consistent deficit across physical and social functioning in COM patients highlights the pervasive nature of the condition. Otorhinolaryngologists treating these patients should remain mindful that medical or surgical intervention for the ear may only be one part of the recovery process; these individuals may also require psychosocial support to truly improve their overall quality of life.

Declarations

Animal and Human Rights Statement

All procedures performed in this study were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki Declaration and its later amendments.

Informed Consent

Informed consent was obtained from all participants.

Data Availability

The datasets used and/or analyzed during the current study are not publicly available due to patient privacy reasons but are available from the corresponding author on reasonable request.

Conflict of Interest

The authors declare no conflicts of interest.

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None.

Scientific Responsibility Statement

The authors declare that they are responsible for the scientific content of the article, including the study design, data collection, analysis and interpretation, manuscript preparation, and approval of the final version of the manuscript.

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