

The Impact of Chronic Suppurative Otitis Media on Quality of Life in the Elderly

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Abstract

Chronic Suppurative Otitis Media (CSOM) is a chronic ear infection that can cause hearing impairment and negatively affect the quality of life, particularly among elderly individuals. This study aimed to determine the relationship between CSOM and quality of life among the elderly at Wijayakusuma Class III Hospital, Purwokerto. This research used a quantitative analytic design with a cross-sectional approach. A total of 46 elderly respondents diagnosed with CSOM were selected using medical record data. Data were collected using a validated questionnaire consisting of 26 items to measure quality of life. Data analysis was performed using univariate analysis and bivariate analysis with Chi-square and Fisher's Exact Test. The results showed that most respondents had active CSOM (71.7%), and the majority experienced poor quality of life (93.5%). Statistical analysis using Fisher's Exact Test showed a significant relationship between CSOM type and quality of life among the elderly ($p = 0.019$). In conclusion, CSOM is significantly associated with decreased quality of life in elderly patients. These findings highlight the importance of early detection, proper treatment, and comprehensive management of CSOM to improve the quality of life of elderly patients.

Keywords: Chronic Suppurative Otitis Media, Elderly, Hearing Impairment, Quality of Life

INTRODUCTION

Hearing is one of the important sensory organs in daily life because it serves as a means of communication and social interaction. Hearing function disorders can cause communication difficulties and reduce an individual's social participation. One of the causes of hearing disorders is chronic suppurative otitis media (CSOM).¹ CSOM is a chronic inflammation of the middle ear characterized by perforation of the tympanic membrane accompanied by the discharge of fluid or mucus (otorrhea).² The incidence of Chronic Suppurative Otitis Media (CSOM) globally shows that the disease burden is still high in developing countries, with a prevalence of around 3.8% in various community populations in low-to middle-income countries.³ Research in several ENT clinical populations in Indonesia also shows that CSOM occurs more frequently in the young adult to middle-aged groups, as reported at Waikabubak Hospital, where the age group 26–45 years was the largest group of CSOM patients.⁴ Although often associated with children, CSOM can also occur in older adults. The risk of CSOM doubles every decade after the age of 55, and about two-thirds of cases are found in individuals aged 65 and over. This condition is an important concern because hearing impairment can affect quality of life, especially in older adults who have experienced various physical, cognitive, and psychosocial changes due to the aging process.^{5,6}

Previous research conducted by Sidam *et al.* (2024) showed a relationship between CSOM and reduced quality of life as well as increased anxiety and depression, especially in bilateral cases.⁷ Another study by Serban *et al.* (2023) also indicated that CSOM, particularly when accompanied by cholesteatoma, can have a significant impact on patients' quality of life and daily activities. The results of this research indicate that CSOM not only causes physical health problems but also affects an individual's psychological and social aspects.⁸

Although some studies have discussed the impact of chronic suppurative otitis media (CSOM) on quality of life, reviews that specifically examine the relationship between CSOM and quality of life in elderly groups at healthcare facilities in Indonesia are still limited. Therefore, this study is novel in analyzing the relationship between chronic suppurative otitis media and the quality of life of the elderly based on the dimensions of physical health, psychological health, social relationships, and environment at Wijayakusuma

Class III Hospital, Purwokerto. This study also assesses the influence of the duration of CSOM suffering and the type of CSOM based on secretion activity on the quality of life of the elderly. The hypothesis of this study is that there is a relationship between chronic suppurative otitis media and quality of life in the elderly.

METHODS

This study uses a quantitative approach with correlational methods and a cross-sectional design to analyze the relationship between chronic suppurative otitis media (CSOM) and quality of life in the elderly.⁹ The research was conducted at the Ear, Nose, Throat – Head and Neck Surgery Clinic of Wijayakusuma Class III Hospital, Purwokerto, in May–June 2024. The research population consisted of all CSOM elderly patients with good general condition, fully conscious, and able to answer questions correctly. The research sample was selected using purposive sampling, which is the selection of respondents based on certain criteria in accordance with the research objectives.¹⁰

The inclusion criteria for this study included patients who had been diagnosed with chronic suppurative otitis media (CSOM), aged ≥ 60 years according to data on their identification card, and willing to participate as research respondents. The exclusion criteria included patients suffering from depression or using hearing aids. The sample size was calculated using G*Power software with an effect size (w) of 0.50, a significance level (α) of 0.05, a research power of 90%, and degrees of freedom (df) = 1, resulting in a minimum sample size of 43 respondents. The independent variable in this study was chronic suppurative otitis media, obtained from patients' medical record documents, while the dependent variable was the quality of life of the elderly. CSOM is defined as an infection of the middle ear and mastoid cavity with persistent tympanic membrane perforation accompanied by discharge for more than 12 weeks.¹¹ Quality of life is measured using the World Health Organization Quality of Life-BREF (WHOQoL-BREF) questionnaire, which consists of 26 items covering the dimensions of physical health, psychological health, social relationships, and environment.¹²

Data collection was carried out through primary data in the form of filling out the WHOQoL-BREF questionnaire by respondents and secondary data from patient medical records. The WHOQoL-BREF instrument has been proven to have good

validity and reliability with validity values of $r = 0.89$ – 0.95 and reliability of $r = 0.66$ – 0.87 . Previous validity and reliability tests on 30 elderly at Talun Health Center showed a calculated r value of 0.390 – 0.798 with a reliability of 0.941 ; all questionnaire items were declared valid and reliable.¹³ Data analysis was conducted univariately to describe the distribution of each research variable and bivariately using the chi-square test to determine the relationship between CSOM and the quality of life of the elderly. If the requirements for the chi-square test were not met, the Fisher test was used with a significance level of $\alpha = 0.05$. This study has considered the principles of research ethics, which include informed consent, confidentiality of respondent data, the principle of beneficence, and fairness for all participants.

RESULTS

Table 1. Characteristics of Research Respondents

No.	Category	Frequency (f)	Percentage (%)
1. Age			
	Older Adults 60-74 years old	40	86.9
	Older Adults 75-90 years old	6	13.1
	Very Old Age >90 years	0	0
2. Gender			
	Female	28	60.9
	Male	18	39.1
3. Jobs			
	Housewives	12	26.1
	Retirees	23	50
	Self-employed	11	23.9
4. Final Education			
	SMPJunior High School	12	26.1
	Senior High School/Vocational High School	23	50
	Bachelor	11	23.9
5. Long Suffering from Illness			
	< 1 year	8	17.4
	1-3 years	24	52.1
	4-5 years	9	19.5
	> 5 years	5	11

Based on Table 1, the majority of respondents were in the age group of 60–74 years (86.9%). By gender, most respondents were female (60.9%). In terms of occupation, most respondents were retirees (50%). Based on education level, the majority of respondents had a last education of high school/vocational school (50%). Based on the duration of suffering from the disease, most respondents had experienced CSOM for 1–3 years (52.1%).

The validity test on 26 questionnaire items in the WHOQoL-BREF showed that all items had a calculated r value greater than the table r (0.361), so all questionnaire items were declared valid. The reliability test showed a Cronbach's Alpha value of 0.869, which means the instrument has high reliability and is suitable for use in research.

Table 2. Instrument Reliability Test Results

Aspects	Number of Items	Cronbach Alpha	Standard Value	Decision
Quality of life	26	0,869	0,6	High reliability

The reliability test results showed a Cronbach's Alpha value of 0.869, which is higher than the standard reliability value (0.7). This indicates that the research instrument has a high level of reliability and can therefore be used for further analysis.

Table 3. Frequency Distribution of CSOM Types

CSOM Type	Frequency (f)	Percentage (%)
Active CSOM	33	71.7
Non Active CSOM	13	28.3

Considering Table 3, the majority of respondents experienced active type CSOM, totaling 33 respondents (71.7%).

Table 4. Frequency Distribution of Respondents' Quality of Life

Quality of Life	Frequency (f)	Percentage (%)
Good	3	6.5
Not Good	43	93.5

Table 4 shows that most respondents have a quality of life that is considered not good, totaling 43 respondents (93.5%), while respondents with a good quality of life are only 3 respondents (6.5%).

Table 5. The Relationship Between CSOM and Quality of Life in the Elderly

CSOM Type		Quality of Life		Total	<i>p value</i>
		Good	Not Good		
Active	Count	0	33	33	0.019
	Expected	2	31	33	
Calm	Count	3	10	13	
	Expected	1	12	13	
	Count				
	Expected				

According to Table 5, elderly individuals with active type chronic suppurative otitis media (CSOM) have a poorer quality of life compared to elderly individuals with quiet type CSOM. Analysis using the Fisher test showed a $p\text{-value} < 0.05$, indicating a significant relationship between chronic suppurative otitis media and quality of life in the elderly.

DISCUSSION

The results of this study indicate that most elderly individuals suffering from CSOM have a poor quality of life. This condition indicates that CSOM can have a negative impact on various aspects of the lives of the elderly, especially on communication abilities, daily activities, and social interactions.

Quality of life in this study was analyzed based on four dimensions, namely physical health, psychological health, social relationships, and environment. Hearing impairment due to CSOM affects the physical health dimension because it can hinder daily activities. In addition, in the psychological aspect, elderly individuals with CSOM tend to have difficulty concentrating, feel lonely, and experience anxiety and depression. In the social relationship aspect, hearing impairment can hinder communication with family or the surrounding environment, thus potentially reducing the quality of social interactions. Meanwhile, in the environmental dimension, hearing limitations can affect the elderly's ability to adapt to their surroundings and increase the risk of social isolation.

Based on the characteristics of the respondents, the majority of elderly individuals are in the 60–74 age group. This condition indicates that this age group is quite vulnerable to the occurrence of CSOM. This finding is in line with the research by Mooy and Sylvia (2023), which states that the risk of CSOM increases in individuals over 55 years old, and most cases occur in individuals over 65 years old. This

indicates that CSOM is not only a health problem in children, but can also occur in the elderly age group.⁴

The gender distribution in this study shows that female respondents are more numerous than male respondents. This condition indicates that women tend to experience CSOM more frequently, which impacts their quality of life. These findings are in line with reports by Duarte *et al.* (2021), which state that social factors such as poverty, access to health services, and education level significantly affect an individual's vulnerability to chronic infectious diseases by increasing the risk of exposure and worsening clinical outcomes.¹⁴ In addition, a study by Prabhu *et al.* (2025) shows that social determinants such as economic status and social support also affect the severity and impact of infectious diseases in vulnerable populations.¹⁵

In terms of occupation, the majority of respondents are retirees. This condition indicates that elderly people who have entered retirement can still experience chronic health problems, such as CSOM, which affect daily activities. Previous research also shows that hearing impairments in the elderly not only affect communication functions but also impact their social participation. Elderly people with hearing impairments tend to withdraw from important social activities, which can subsequently reduce their quality of life and involvement in daily social and economic activities.¹⁶

In addition, several previous studies have shown that hearing impairment in the elderly has a wide impact on social life and involvement in daily activities as well as individual economics. A study by Nugroho *et al.* (2022) shows that hearing impairment in the elderly has a wide impact on social life and involvement in daily activities as well as individual economics.¹⁷ Another study by Sabri *et al.* (2025) reported that hearing impairment is significantly associated with limitations in social abilities in the elderly, such as decreased communication skills, social isolation, and reduced self-confidence, all of which can affect social participation and overall well-being.¹⁸ Other research using data from the elderly population shows that hearing impairment can reduce social engagement and physical function, which in turn negatively impacts mental health and overall quality of life in the elderly group.¹⁹ These three findings support the idea that hearing impairment is not merely a medical issue but also has implications for social well-being, daily activities, and the economic involvement of the elderly.

The education level of respondents in this study was dominated by high school/vocational school education. The education level can affect a person's understanding of the disease as well as the treatment process they undergo. Individuals with a higher level of education tend to have better access to health information, thereby allowing them to manage the disease more optimally.

Most respondents have suffered from CSOM for 1–3 years. This condition indicates that CSOM is a chronic disease that requires treatment over a fairly long period of time. This is in line with research by Khairkar *et al.* (2023), which states that CSOM is a chronic infectious disease that can last a long time and has the potential to cause various complications if not properly managed.²

The results of the statistical analysis show a significant relationship between the type of CSOM and the quality of life of the elderly. Elderly individuals with the active type of CSOM tend to have a lower quality of life compared to those with the quiet type of CSOM. This finding is in line with research by Sidam *et al.* (2024) assessing the impact of CSOM on patients' quality of life using the Chronic Ear Survey (CES) tool, and also evaluating psychological conditions such as anxiety and depression. The results showed that CSOM adversely affects quality of life parameters, especially in bilateral cases or with more severe hearing impairment, which implicitly reinforces that the active condition of the disease is more difficult for patients compared to milder conditions.⁷

Chronic hearing impairment due to CSOM can affect various aspects of older adults' lives. Physically, a prolonged ear infection can cause discomfort and impair hearing function. From a psychological aspect, difficulties in communication can lead to stress, anxiety, and feelings of isolation. In addition, limitations in interacting with the social environment can also result in a decline in the quality of social relationships among older adults.

This finding is also in line with research by Schouwenaar *et al.* (2023), which indicates that CSOM, especially when accompanied by complications such as cholesteatoma, has a significant negative impact on patients' quality of life in various domains, including hearing function, social activities, and overall well-being.²⁰ These findings are also in line with the results of research by Setiawan and Meragawa (2021), which reported a significant difference in

quality of life scores between CSOM patients with and without cholesteatoma, indicating that complications and disease type can worsen patients' quality of life through impaired hearing function and more severe recurrent symptoms. In the case of CSOM, hearing impairment as well as complications such as cholesteatoma can worsen the health condition of the elderly, thereby leading to increased dependence on others.²¹

This study also supports previous research, which stated that hearing impairment can affect a person's quality of life.²² It is mentioned that the use of hearing aids can help improve the quality of life of patients with hearing impairments. This indicates that medical interventions and auditory rehabilitation can be one of the efforts to improve the quality of life of elderly individuals experiencing CSOM.

However, the results of this study do not entirely align with the research by Schouwenaar *et al.* (2023), which states that not all elderly people with CSOM experience a significant decline in quality of life. The study explains that good social support, as well as adequate access to health services, can help the elderly maintain quality of life even when experiencing hearing impairment.²⁰

Thus, the management of CSOM in the elderly needs to be carried out comprehensively through early diagnosis, appropriate treatment, and adequate social and psychological support. A holistic approach is expected to help improve the quality of life of elderly people suffering from CSOM.

The researchers realized that in the implementation of this study, there were limitations. The mood of the elderly also affected the completion of the instruments, so the researchers had to be more sensitive to the condition of the elderly, which impacted the delay in completing the instruments. In addition, many elderly individuals were reluctant to be interviewed because they felt embarrassed, did not want to share personal information, and stated that they did not understand the questions posed by the researchers.

CONCLUSION

Based on the research results, it can be concluded that there is a significant relationship between chronic suppurative otitis media (CSOM) and the quality of life in the elderly at Wijayakusuma Class III Hospital, Purwokerto. Elderly individuals with

active type CSOM tend to have a lower quality of life compared to those with quiet type CSOM. This condition indicates that hearing disorders caused by CSOM can affect various aspects of an elderly person's life, including physical and psychological health, social relationships, and the environment. Therefore, comprehensive treatment efforts are needed through early diagnosis, appropriate therapy, as well as social and psychological support to help improve the quality of life of elderly people suffering from CSOM.

ETHICAL APPLICATION

Written informed consent was obtained from all participants prior to data collection

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