

Research**Adaptation of Chronic Otitis Media Questionnaire (COMQ-12):
reability and validity of the Indonesian version****Hadi Sudrajad, Sarwastuti Hendradewi, Dewi Pratiwi, Novi Primadewi,
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Sebelas Maret University/ Dr. Moewardi General Hospital, Surakarta**ABSTRACT**

Background: Chronic suppurative otitis media (CSOM) is one of the most common ear diseases that has a major impact on quality of life (QoL). The Chronic Otitis Media Questionnaire 12 (COMQ-12) is a CSOM-specific questionnaire that aims to assess QoL. Until currently, there is no questionnaire that has been tested for reliability and validity in the Indonesian version. **Purpose:** To assess the reliability and validity of the Indonesian version of COMQ-12. **Method:** An analytic observational study with a cross-sectional design, conducted in Dr. Moewardi General Hospital Surakarta Indonesia from March to May 2024. Reliability was assessed by internal consistency, and validity was assessed by Pearson correlation. **Result:** The reliability test with internal consistency obtained Cronbach's alpha value for all question items >0.7 . This indicated that all question items had good reliability. Meanwhile, the validity test with the Pearson correlation test obtained a p-value <0.05 for all question items with coefficients, all of which were positive. This indicated that all question items had good validity. **Conclusion:** Indonesian version of COMQ-12 has good reliability and validity to assess QoL in CSOM patients.

Keywords: CSOM, COMQ-12, QoL, reliability, validity**ABSTRAK**

Latar belakang: Otitis media supuratif kronik (OMSK) merupakan salah satu penyakit telinga yang paling umum dijumpai, dan berdampak besar pada kualitas hidup (QoL). Kuesioner Otitis Media Kronik 12 (COMQ-12) merupakan kuesioner khusus Otitis Media Supuratif Kronik (OMSK) yang bertujuan untuk menilai QoL, namun saat ini kuesioner COMQ-12 dalam versi Bahasa Indonesia belum teruji reliabilitas dan validitasnya. **Tujuan:** Untuk menilai reliabilitas dan validitas COMQ-12 versi Bahasa Indonesia. **Metode:** Penelitian observasi analitik dengan desain potong lintang, yang dilakukan di RSUD Dr. Moewardi Surakarta, Indonesia dari bulan Maret sampai Mei 2024. Reliabilitas dinilai dengan konsistensi internal, dan validitas dinilai dengan korelasi Pearson. **Hasil:** Uji reliabilitas dengan konsistensi internal memperoleh nilai Cronbach's alpha untuk semua butir soal $>0,7$. Hal ini menunjukkan bahwa semua butir soal memiliki reliabilitas yang baik. Sementara itu, uji validitas dengan uji Pearson correlation memperoleh nilai $p<0,05$ untuk semua butir soal, dengan koefisien yang semuanya positif. Hal ini menunjukkan bahwa semua butir soal memiliki validitas yang baik. **Kesimpulan:** COMQ-12 versi Indonesia mempunyai reliabilitas dan validitas yang baik untuk menilai kualitas hidup pasien OMSK.

Kata kunci: OMSK, COMQ-12, QoL, reliabilitas, validitas**Correspondence address:** Hadi Sudrajad. Department of Otorhinolaryngology and Head Neck Surgery, Faculty of Medicine, Sebelas Maret University/ Dr. Moewardi General Hospital, Surakarta. Email: hadisudrajad01@gmail.com

INTRODUCTION

Chronic suppurative otitis media (CSOM) is a prolonged inflammation and infection of the middle ear, with onset lasting ≥ 2 months and one of the most reported infectious diseases of the ear. CSOM is characterized by perforation of the tympanic membrane (TM) and discharge from the ear.^{1,2} The worldwide prevalence of CSOM is reported to be more than 300 million.³ In Indonesia, the prevalence of CSOM is 5.4%.⁴ CSOM has become one of the world's major health problems as it is one of the most common causes of acquired hearing loss, resulting in reduced quality of life (QoL).⁵

CSOM is commonly caused by pathogenic infections, mainly viruses and bacteria. *Staphylococcus aureus* is the most commonly identified pathogen that causes CSOM.⁶ Various pathogens can invade the middle ear mucosa and induce an inflammatory response, leading to symptoms such as hearing loss, otorrhea, ear fullness, and tinnitus.^{7,8} There are several risk factors for CSOM such as childhood age, low social and economic status, poor personal hygiene, malnutrition, and genetic factors.²

The symptoms of CSOM are often chronic and persistent, impacting the daily activities, especially due to hearing loss. Hearing loss can make it difficult for patients to interact with their family, community, and neighborhood. This leads to isolation, which can produce psychological problems such as anxiety and sadness.⁹ These problems caused by CSOM can lead to a poor QoL. Many studies had published various questionnaires that serve to assess the impact of CSOM on the QoL. Chronic Otitis Media Questionnaire 12 (COMQ-12) which has been translated into various languages such as Spanish, Dutch, and Indian is a patient perspective-based questionnaire that assesses the perceived impact of CSOM.¹⁰⁻¹³ However, until now there had not been an Indonesian version of COMQ-12 that had been tested for reliability

and validity.

This study aimed to assess the reliability and validity of the Indonesian version of COMQ-12.

METHOD

This was an analytic observational study with a cross-sectional design that aimed to assess the reliability and validity of Indonesian version of COMQ-12. The study was conducted at Dr. Moewardi General Hospital Surakarta, Indonesia, during March-May 2024. This study was approved by the Health and Research Ethics Committee of Dr. Moewardi General Hospital Surakarta. There were 37 subjects with CSOM who were included in this study. The inclusion criteria were patients with CSOM who came to Dr. Moewardi General Hospital and able to read and understand Indonesian language properly. Exclusion criteria were subjects suffering from other ear diseases besides CSOM, and pregnant women.

The questionnaire was translated from its original language, English, by two sworn translators using the forward-backward method. The questionnaires that had been translated from English to Indonesian were then evaluated to assess whether there were significant differences in the translations of the two sworn translators. If no significant differences were found, the questionnaire was translated back into English and then evaluated again by comparing with the original versions. If it was appropriate, the questionnaire was ready to be used and given to the research subjects.

Subjects who met the inclusion criteria were included in the study, and demographic data was collected. Subjects signed an informed consent, then asked to complete the Indonesian version of COMQ-12 which consisted of 12 different questions divided into 4 domains, i.e. symptom's severity,

impact of CSOM on work and daily activities, impact of CSOM on health services, and impact of CSOM in general. Each question was scored 0-5 and then each score was totalled. A higher score indicated a greater impact on QoL.

The statistical analysis process in this study used the IBM SPSS version 25 application. The reliability test was assessed using internal consistency based on the Cronbach's alpha value. A Cronbach's alpha value >0.7 indicated good reliability. The validity test was conducted with the Pearson correlation test from the value of each question to the total score. A p-value <0.05 and a positive coefficient indicated good validity.

RESULT

Demography and clinical characteristics

In this study, there were 37 subjects with CSOM. Subjects were dominated by the 21-30 years age group, followed by subjects in the 10-20 years, 41-50 years, and 31-40 years age groups. The sex distribution was slightly more dominated by women than men with a sex ratio of men and women of 1:1.18. The education level was dominated by subjects with high school and junior high school education levels. The hearing degree of the subjects mostly had mild hearing loss and unilateral lesions. Demographic and clinical data of the subjects could be seen in Table 1.

Table 1. Demography and clinical characteristics

Characteristics	N (%)
Age	
10-20	5 (13.51)
21-30	25 (67.57)
31-40	3 (8.11)
41-50	4 (10.81)
Gender	
Men	17 (45.95)
Women	20 (54.05)
Education	
Elementary school	5 (13.51)
Junior high school	12 (32.43)
High school	17 (45.95)
Diploma/Undergraduate	3 (8.11)
Hearing Loss Degree	
Mild	27 (72.97)
Moderate	10 (27.03)
Lesion	
Unilateral	31 (83.78)
Bilateral	6 (16.22)

Reliability

The reliability test in this study applied internal consistency test based on the Cronbach's alpha value. In all question items consisting of 12 different questions, all Cronbach's alpha values were obtained

>0.7 . This indicated that all questions from the Indonesian version of COMQ-12 had good reliability. The reliability test results of the Indonesian version of COMQ-12 could be seen in Table 2.

Table 2. Reliability test with Cronbach's alpha value

Item	Corrected item-Total correlation	Cronbach's alpha
Q1	0.55	0.83
Q2	0.65	0.79
Q3	0.44	0.93
Q4	0.46	0.74
Q5	0.59	0.89
Q6	0.52	0.86
Q7	0.44	0.95
Q8	0.64	0.71
Q9	0.58	0.84
Q10	0.52	0.76
Q11	0.52	0.81
Q12	0.60	0.93

Q = Question

Validity

The validity test in this study used the Pearson correlation test based on the correlation of each question item with the total score. The validity test results obtained for

all items had a p-value <0.05 with a positive coefficient. This indicated that all question items in the Indonesian version of COMQ-12 had good validity. The validity test results could be seen in Table 3.

Table 3. Validity test

Item	Coefficient	p-value
Q1	0.2	0.028
Q2	0.3	0.046
Q3	0.2	0.032
Q4	0.4	0.015
Q5	0.5	0.002
Q6	0.36	0.030
Q7	0.38	0.019
Q8	0.47	0.003
Q9	0.16	0.036
Q10	0.36	0.029
Q11	0.27	0.002
Q12	0.44	0.007

Q = Question

DISCUSSION

The results of this study indicated that the Indonesian version of COMQ-12 had good reliability and validity. Thus, this questionnaire could be used to assess the QoL of CSOM patients in Indonesia. Previous

study by van Dinther et al.¹² reported that the Dutch version of COMQ-12 had good reliability and validity. Another study by Otoy-Tono et al.¹⁰ reported similar results on the Spanish version of the COMQ-12. The good reliability of the Indonesian version of COMQ-12 indicates that this

questionnaire can produce similar results despite repeated testing on different CSOM patients.¹⁴ Meanwhile, good validity indicates that the Indonesian version of the COMQ-12 questionnaire can appropriately assess the QoL of CSOM patients in accordance what it was intended with the original questionnaire in English version.¹⁵

The COMQ-12 was first created by Phillips et al.¹⁶ in 2014 in English language, and was developed with the aim of assessing the impact of CSOM on QoL. This questionnaire was created by combining three different questionnaires: the Chronic Ear Survey (CES), Chronic Otitis Media Outcome Test 15 (COMOT-15), and Chronic Otitis Media 5 (COM-5). The COMQ-12 consists of 12 different questions divided into 4 domains, questions 1-7 in the domain of the severity of CSOM symptoms, questions 8-9 in the domain of the impact of CSOM on work and daily activities, questions 10-11 in the domain of the impact of CSOM on health services, and question 12 in the domain of the impact of CSOM in general.¹⁷ CSOM was one of the most common diseases in the field of otorhinolaryngology that has a wide impact on QoL due to its recurrent and persistent symptoms.^{18,19} With the Indonesian version of COMQ-12, evaluation of therapy is not only be assessed clinically based on the symptoms suffered by patients, but also on the improvement of QoL.²⁰

There were several limitations of this study. First, this study did not assess the correlation of demographic and clinical characteristics with patient's QoL. Second, the study was only conducted in one center, therefore researchers suggest that in the future, it can be carried out in several centers at once.

In conclusion, the results of this study concluded that the Indonesian version of COMQ-12 had good reliability and validity.

CONFLICT OF INTEREST

The authors declared no conflict of interest

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