Jurnal Keperawatan Florence Nightingale (JKFN)
Vol. 8, No. 2, Desember 2025, pp. 290~297
ISSN: 2657-0548, DOI: 10.52774/jkfn.v8i2.244
Published by Sekolah Tinggi Ilmu Kesehatan Stella Maris Makassar

Research article
https://doi.org/10.52774/jkfn.v8i2.244

Long-Term Suffering from Respiratory Tract Infections and Its Impact on Quality of Life: A Cross-Sectional Study

Lama Menderita ISPA dan Dampaknya Terhadap Kualitas Hidup: Studi Potong-Lintang

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Received: 06-11-2025; Revised: 04-12-2025; Accepted: 08-12-2025

ABSTRAK

Infeksi Saluran Pernapasan Akut (ISPA) adalah penyakit menular yang menyerang saluran pernapasan akut, termasuk hidung, tenggorokan, dan paru-paru. Tujuan penelitian untuk mengetahui hubungan antara durasi ISPA dan kualitas hidup. Penelitian dilakukan di Puskesmas Waibhu menggunakan metode *non-probability sampling* dengan teknik *purposive sampling*. Sampel sebanyak 80 dengan kriteria inklusi pasien ISPA berusia 19-60 tahun; durasi ISPA 5-30 hari; sadar sepenuhnya; mampu membaca dan menulis; bersedia menjadi responden. Responden yang mengalami disorientasi waktu, tempat, dan orang dikecualikan. Instrumen yang digunakan adalah kuesioner WHOQOL-BREFF untuk mengukur kualitas hidup. Analisis data menggunakan analisis univariat (jenis kelamin, usia, pekerjaan, status perkawinan, agama, durasi ISPA, berapa kali menderita ISPA dalam 6 bulan terakhir, dan kualitas hidup) dan analisis bivariat (hubungan antara lama menderita ISPA dan kualitas hidup) menggunakan uji Kruskal-Wallis. Hasil menunjukkan adanya hubungan yang signifikan antara lama ISPA dan kualitas hidup pasien ISPA (p=0.001), nilai H=16.336. Perlu diperhatikan kualitas hidup pasien untuk mencegah keparahan infeksi.

Kata Kunci: durasi; infeksi saluran pernapasan akut; kualitas hidup

ABSTRACT

Acute Respiratory Infections (ARI) are infectious diseases that attack the acute respiratory tract, including the nose, throat, and lungs. The purpose of the research to determine the relationship between the duration of ARI and the quality of life. The study was conducted at the Waibhu Community Health Centre using non-probability sampling with purposive sampling techniques. The sample size was 80 with inclusion criteria of ARI patients aged 19-60 years; duration of ARI are 5-30 days; fully conscious; able to read and write; and willing to be respondents. Respondents who experienced disorientation in time, place, and person were excluded. The instrument used the WHOQOL-BREFF questionnaire to measure quality of life. Data analysis used univariate analysis (gender, age, occupation, marital status, religion, duration of ARI, number of ARI episodes in the last 6 months, and quality of life) and bivariate analysis (the relationship between the duration of ARI and the quality of life) used the Kruskal-Wallis test. The results showed that there was a significant relationship between the duration of ARI and the quality of life of ARI patients (p=0.001), H=16.336. It is necessary to pay attention to the patient's quality of life to preventing the severity of infection.

***Keywords**: acute respiratory infection; duration; quality of life*

1. INTRODUCTION

Respiratory Tract Infections or Acute Respiratory Infection (RTIs/ARI) are infectious disease that attack the acute respiratory tract, including the nose, throat, and lungs, and usually last for approximately 14 days (Garmini & Purwana, 2020). The World Health Organization (WHO) notes that ARI ranks fourth as the leading cause of global mortality, resulting in nearly 3 million deaths worldwide in 2016 (40 deaths per 100.000) (Li et al., 2021). Meanwhile, data from the Directorate of Prevention and Control of Infectious Diseases, Ministry of Health, shows that the trend of ARI cases in Indonesia from January to September 2023 is quite high, ranging from 1.5 to 1.8 million cases nationally. The three provinces with the highest number of ARI cases are Central Java, West Java, and DKI (Kemenkes, 2023). According to data from the Papua

Provincial Health Office, there were 9.141 cases of ARI in 2023. The highest number of cases occurred in children, with 5.972 cases, followed by adolescents and adults with 1.769 cases, and the elderly with 271 cases (Parinduri et al., 2024). According to data obtained from the Waibhu Community Health Centre, The Waibhu Health Centre in Jayapura Regency contributed 678 cases of ARI in November 2024, where ARI ranked first among the most prevalent diseases at the health center.

The signs and symptoms that usually appear in people with ARI are coughing, headache, pain when swallowing, and swollen lymph nodes. This can directly affect physical and psychological condition of the patient, which in turn affects their quality of life. Quality of life is important in improving a person's well-being in their daily life. Quality of life is an individual's perception of the good and bad aspects of life. The World Health Organization Quality of Life (WHOQOL) defines quality of life as an individual's perception related to their goals, expectations, standards, and concerns in their life in society within the context of existing culture and values systems (Andesty & Syahrul, 2018). This means that quality of life can be influenced by an individual's relationship with their surroundings, physical conditions, psychosocial condition, and level of independence, namely biological physical health and functional capacity; mental health in terms of personal well-being and life satisfaction; social relationship and environmental health; as well as socioeconomic conditions (Yohanes Kiling & Novianti Kiling-Bunga, 2019). In measuring health-related quality of life, it is necessary to consider three functional domains: physical, psychological (cognitive and emotional), and social (Jacob & Sandjaya, 2018).

The longer a person suffers from ARI, the greater the likelihood of a decline in quality of life. A study shows that drug therapy is influenced by the duration of ARI an the severity of ARI symptoms, with 12 patients having poor quality of life (Rizki Lestari et al., 2024). Another study also shows that the longer a person suffers from respiratory disease, the worse their quality of life will be, followed by worsening conditions due to increased airway obstruction and respiratory effort (Ritianingsih et al., 2017). Whereas the quality of life of patients can represent the burden of the disease they suffer from and can indicate how well a person is able to perform their function (Rizki Lestari et al., 2024). Fatigue due to respiratory symptoms such a shortness of breath, persistent coughing and chest pain, and difficulty concentrating affects quality of life. A decline in quality of life measured by EQ-5D six months after acute infection with moderate to severe impairment showed that 56% affected mobility, 48% experienced pain or discomfort, and 46% experienced anxiety to depression (Taboada et al., 2020).

Based on the results of a preliminary study conducted on 21 February 2025 at the Waibhu Community Health Centre in Jayapura, it was found that respiratory tract infections (RTIs) were among the top 10 diseases, with RTIs ranking first in 2023 and 2024. Based on interviews with patients seeking treatment at the ARI clinic, it was found that ARI significantly interferes with daily activities, with respiratory symptoms affecting sleep quality and concentration, causing stress due to conditions that interfere with themselves and others. It is hoped that patients with ARI can manage their symptoms by undergoing appropriate treatment to address the symptoms arising from ARI, thereby achieving optimal health. This study aims to determine the relationship between the duration of ARI and the quality of life of ARI patients.

2. RESEARCH METHODS

The type of research is quantitative research with a correlational quantitative design that examines the relationship between the independent variable of duration of ARI and the dependent variable of quality of life of ARI patients. This study used a cross-sectional approach. The cross-sectional research design in this study was conducted by collecting demographic data related to the duration of suffering from ARI simultaneously with the completion of a questionnaire on the quality of life variable, which was conducted only once. The population on this study consisted of patients with ARI who visited the Adult Clinic in the Waibhu Community Health Centre. The sample in this study consisted of 80 respondents. The sampling technique used in this study was non-probability sampling with the purposive sampling method. The inclusion criteria for this study were patients with acute respiratory infections aged 19-60 years who were willing to be respondents; able to read and write; fully conscious; and able to be interviewed in Indonesian. The exclusion criteria for this study were respondents who experienced disorientation in term of place, time, and person. The instrument used in this study was the World Health Organization Quality of Life-BREFF (WHOQOL-BREFF) questionnaire, which consist of 26 items covering four dimensions, namely physical health, psychological health, social health, and environmental health. The questionnaire was tested in Indonesian by Salim et al. in 2007 in Mampang Subdistrict, South Jakarta, with sample of 306 respondents. The results obtained showed a significant relationship between item scores and dimension scores (r=0.409-0.850), indicating that this measurement tool is valid for measuring quality of life. The reliability test results for the quality of life questionnaire showed that Cronbach's alpha was 0.77 (>0.6), indicating that the questions in the questionnaire were reliable. Scores of 1-44 are poor quality of life, scores 45-87 are adequate quality of life, and scores of 88-130 are good quality of life. The data analysis in this study was univariate

analysis describing the characteristics of respondents (gender, age, occupation, highest level of education, marital status, religion, duration of ARI, number of ARI episodes in the last 6 months, and quality of life) and bivariate analysis to analyse the relationship between the duration of ARI and the quality of life of ARI patients using the Kruskal-Wallis statistical test. This test was chosen as an alternative test because the data was not normally distributed The research has passed the ethical feasibility test with number 065KEPK-FKM UC/2025.

3. RESULTS

Table 1. Distribution of Respondent Characteristic among Patients with Acute Respiratory Infections (n=80)

Respondents Characteristics	Frequency (f)	Percentage (%)
Gender		
Male	29	36,3 %
Female	51	63,7 %
Age		
19-25 Years	30	37,8 %
26-35 Years	24	30,4 %
36-45 Years	11	14 %
46-55 Years	12	15,2 %
56-60 Years	3	3,9 %
Occupation		
Domestic Helper	1	1,3 %
Civil Servants	6	7,6 %
Lecturer	1	1,3 %
Housewife	22	27,5 %
Employee	1	1,3 %
Student	12	15,1 %
Priest	1	1,3 %
Seller	1	1,3 %
Farmer	10	12,5 %
Sales	1	1,3 %
Driver	1	1,3 %
Not Working	13	16,3 %
Soldier	1	1,3 %
Entrepreneur	3	3,8 %
Marital Status		
Married	60	75 %
Unmarried	20	25 %
Religion		
Islam	4	5,0 %
Christian Catholic	4	5,0 %
Christian Protestant	72	90,0 %
Number of ARI episodes in the last 6 months		
1 Time	19	23,8 %
2 Times	15	18,8 %
3 Times	26	32,6 %
4 Times	12	15,0 %
5 Times	4	5,0 %
6 Times	4	5,0 %

Based on Table 1, the gender distribution among ARI patients was 51 female respondents (63,7%) and 29 male respondents (36,3%). Based on age group, those aged 19-25 years old comprised 30 respondents (37,8%); 26-35 years old comprised 24 respondents (30,4%); 36-45 years old, comprised 11 respondents (14%); 46-55 years old comprised 12 respondents (15,2%); and 56-60 years old comprised 3 respondents (3,9%). Based on occupation showed that the majority of respondents were housewives (27,5%) followed by unemployed (16,3%), students (15,1%) and farmers (12,5%). Marital status showed that the majority of respondents werw Protestant Christians, comprised 72 respondents (90,1%). Respondents who had suffered

from ARI in the last 6 moths showed that the majority had suffered 3 times (32,6%), followed by 1 time and 2 times (23,8% and 18,8%).

Table 2. Distribution of Duration of Respiratory Tract Infection in Patients with Respiratory Tract Infection.

Duration of Respiratory Tract Infection (Days)	Frequency (f)	Percentage (%)
5	1	1,3 %
14	3	3,8 %
17	4	5 %
18	1	1,3 %
20	1	1,3 %
21	4	5 %
22	2	2,5 %
23	7	8,8 %
24	16	20 %
25	8	10 %
26	2	2,5 %
27	20	25 %
28	6	7,5 %
29	1	1,3 %
30	4	5 %
Total	80	100 %

Tabel 2 shows that majority of respondents suffered from ARI for 27 days, naemly 20 respondents (25%), followed by 24 days (20%) and 25 days (10%).

Table 3. Quality of Life Domain in Patients with Acute Respiratory Infections (n=80)

Quality of Life Domain	Frequency(f)	Percentage (%)
Physical		
25	3	3,8
31	12	15,0
38	19	23,8
44	30	37,5
50	7	8,8
56	6	7,5
63	1	1,3
94	2	2,5
Psychological Well-Being		
25	1	1,3
31	3	3,8
38	26	32,5
44	26	32,5
50	8	10,0
56	6	7,5
69	3	3,8
75	1	1,3
80	1	1,3
81	3	3,8
94	1	1,3
100	1	1,3
Social Relations		
25	19	23,8
31	30	37,5
44	20	25,0
50	7	8,8
75	2	2,5
94	1	1,3
100	1	1,3

Environment		
25	9	11,3
31	15	18,8
38	26	32,5
44	13	16,3
50	11	13,8
56	1	1,3
63	1	1,3
69	1	1,3
81	1	1,3
94	1	1,3
100	1	1,3

Tabel 3, it shows that the majority of respondents scored 44, with 30 respondents (37,5%) in the physical domain; scores of 38 and 44 were obtained by 26 respondents (32,5%) in the psychological well-being domain; scores of 31 were obtained by 30 respondents (37,5%) in the social relations domain; scores of 38 were obtained by 26 respondents (32,5%) in the environmental domain.

Table 4. Frequency Distribution of Quality of Life in Patients with Acute Respiratory Infections (n=80)

Quality of Life	Frequency (f)	Percentage (%)
Poor	72	90
Adequate	7	8,8
Good	1	1,3
Total	80	100

Tabel 4, shows that 72 respondents (90%) experienced poor quality of life and 7 respondents (8,8%) experienced adequate quality of life.

Table 5. Relationship Between the Duration of Respiratory Tract Infection and the Quality of Life of Patients with Acute Respiratory Infections (n=80)

Duration of Respiratory Tract Infection (Days)	Quality of Life	N	*Mean Rank*	*Kruskal-Wallis H*	*p-value*
5-30 days	Insufficient	72	43,94	16,336	0,001
	Adequate	7	10,79		
	Good	1	1,00		

Table 5 shows the results of statistical testing using Kruskal-Wallis test, which yielded a p-value of 0,001 (<0,005). This indicates that there is significant relationship between the duration of ARI and the quality of life of ARI patients. The Kruskal-Wallis value of 16,336 means that there are significant differences in the quality of life group data.

4. DISCUSSION

Statistical test results shows that there is a significant relationship between the duration of ARI and the quality of life of ARI suffers. The test results show a significant level of difference, where at least group has a different median from the other groups. Based on these results, it can be said that the longer or more frequently a person experiences ARI, the greater like likelihood of a decline in their quality of life in terms of physical, psychological, social and environmental dimensions. Based on the interviews results, patients said that when they had ARI, they often felt tired; anxious and stressed if the illness took a long time to heal; and experienced disruption to their social interactions and a decline in income because they were unable to work. These factors have the potential to reduce quality of life. Patient also complained about the long duration of medication, where they had to finish the prescribed medication even though they no longer felt any symptoms, so most of them did not finish the prescribed medication. This is one of the factors causing them to experience a long duration of ARI in subsequent attacks.

The lower the quality of life, the higher the mean rank, indicating that groups with insufficient quality of life experience more severe or longer-lasting effects of infection. Conversely, groups with adequate and good quality of life have a much lower mean rank, indicating that they experience milder effects or recover more quickly. A prospective cohort study conducted on adults (aged 18-87 years) showed that

respiratory tract infections lasting more than 7 days significantly WHOQOL-BREFF scores, particularly in the physical and psychological domains (Zhang et al., 2023). This contrast with a study using data from a family panel survey in China (CFPS 2022) that focused on the impact of respiratory diseases on quality of life and subjective well-being, although it did not specifically focus on ARI. The results showed that respiratory tract infection did not affect the quality of life of patients in China but the pandemic exacerbated the condition of patients, which had an impact on the use of ICU beds (Chen & Chen, 2025)

A study conducted in Iraq showed that respiratory infections have a negative impact on quality of life associated with symptoms of pain, anxiety, depression and mobility problems (Liska et al., 2022). Recurrent ARI attacks are characterized by persistent and debiliting symptoms that remain at least 4 weeks after the initial infection. These symptoms often occur without the presence of severe acute infection or pre-existing comorbidities. Several studies show that the most common symptoms, namely fatigue, dyspnea, pain, anxiety, depression, and gastrointestinal problems (Tenforde et al., 2020). A cross-sectional observational study conducted in New York on persistent symptoms of Post-Acute COVID-19 Syndrome and its impact on physical function, cognitive function and quality of life showed that 63% of respondents experienced cognitive impairment and its impact on self-care, anxiety/depression and activities, with 19% of respondents reporting anxiety and 28% reporting depression (Tabacof et al., 2022).

Other evidence also shows that symptoms of stress appear after experiencing moderate to severe ARI, with women being at greater risk because they are at high risk of ARI (Anaya et al., 2021). Other studies also state that people with ARI are likely to experience depression and anxiety before exposure, thereby exacerbating the psychological distress of ARI patients, where symptoms can arise from various factors, such as lack of resources, discrimination, and previous infection experiences that can have a negative impact on mental health (Brooks et al., 2020). Respiratory tract problems not only affect physical or mental health but also impact overall quality of life.

This is also supported by research conducted in Egypt, where fatigue, cognitive impairment, stress, depression, and sleep difficulties experienced in respiratory problems will experienced by a person until the recovery stage. This incident may be influenced by a lack of information about long-term actions in recovery (Aly & Saber, 2021). A prospective cohort study conducted on 183 participants examining respiratory symptoms in patients 35 days post-hospitalization regarding quality of life, physical function, mental function, and psychosocial function showed that only a small proportion of respondents reported good quality of life. However, the majority experienced a statistically significant impact on their quality of life and ability to perform daily activities (Jacobs et al., 2020). This study is also supported by research showing that 16,9% of all respondents experienced poor or moderate mental health. Where stress disorders due to recurrent infection (39%), depression (33%), and anxiety (30%) were reported more than six months after discharge from hospital. This is associated with chronic fatigue (40,4%) and active mental illness (>40%) (Ahmed et al., 2020). In addition, a systematic review confirmed that quality of life in patients with respiratory problems is significantly affected, regardless of whether the individual has been discharged from hospital or is in recovery, even tough the questionnaires used to measure quality of life are heterogeneous (Nandasena et al., 2022).

Quality of life is an individual's perception of their position in life, encompassing cultural context and values systems regarding goals, expectations, standards, and concerns. Therefore, quality of life is used as a general predictor of health and is important for understanding the overall impact of ARI, which includes physical health status, social restriction, and psychological conditions. The prevalence, recurrence, duration and severity of ARI are influenced by various factors, such as immunization history. Identifying the symptoms of ARI that require early intervention is very important in order to plan and provide medical, psychological and physical services for sufferers to enable recovery from this infection, including the ability to return to work. In addition, a prospective approach is needed that includes clinical evaluation of patients with ARI from the time of initial diagnosis to assess the progression of the disease. A comprehensive multidisciplinary approach is needed as a basis for improving understanding and management of this disease. This will minimize the duration of the disease and prevent recurrent attacks.

5. CONCLUSIONS

Research shows that there is a significant relationship between the duration of ARI and the quality of life of ARI patients. These findings emphasise the importance of early intervention and effective management of respiratory tract infections to prevent a decline in quality of life. Special attention should be paid to groups with low quality of life, as they tend to experience more severe effects during infection. It is hoped that future research will categorise the duration of ARI so that the most at-risk duration groups can be identified and research related to psychosocial or rehabilitative interventions can be conducted to improve the quality of life of ARI patients.

Acknowledgement

We would like to express our gratitude to the Research and Community Services Institute Cenderawasih University. In addition, we would also like to thank the staff at the Waibhu Community Health Center for assisting us throughout the research process.

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