

Research Article



## FACTORS ASSOCIATED WITH HEALTH SEEKING BEHAVIOUR OF PNEUMONIA CHILDREN UNDER FIVE IN LUBUK BEGALUNG HEALTH CENTER 2024

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### ABSTRACT

#### **Background:**

The Lubuk Begalung Community Health Centre has the highest number of pneumonia cases among children under five from 2020 to 2023. Pneumonia is a leading cause of infection-related mortality in children under five. Poor health seeking behaviour may lead to complications and increase the risk of death. This study aimed to determine the factors associated with treatment-seeking behaviour for pneumonia among children under five at the Lubuk Begalung Community Health Centre.

**Methods:** This study uses an analytical research type with a cross-sectional design and was conducted from February to June 2024 at the Lubuk Begalung Community Health Centre. The sample in this study consisted of 87 respondents. Data were analysed using univariate, bivariate, and multivariate analyses.

**Results:** The statistical test results showed that 62.1% of respondents had poor health-seeking behaviour for pneumonia among children under five. Bivariate analysis indicated that mother's age ( $p = 0.004$ ;  $PR = 1.719$ ; 95% CI: 1.190–2.483), mother's knowledge ( $p < 0.0001$ ;  $PR = 3.063$ ; 95% CI: 2.049–4.578), and perceived disease severity ( $p = 0.014$ ;  $PR = 1.587$ ; 95% CI: 1.109–2.270) were associated with health-seeking behaviour for pneumonia among children under five. Binary logistic regression analysis showed that family income was associated with health-seeking behaviour ( $p = 0.017$ ;  $PR = 16.406$ ; 95% CI: 1.642–163.900).

**Conclusion:** Health-seeking behavior for pneumonia among children under five is influenced by maternal age, maternal knowledge, and the perceived severity of the illness, with family income being the most dominant factor. Therefore, enhanced health education efforts are needed by the Padang City Health Office and the Lubuk Begalung Community Health Center, particularly regarding the symptoms and danger signs of pneumonia, as well as the importance of seeking early treatment at healthcare facilities.

**Keywords:** *Children Under Five, Health, Seek, Behaviour, Pneumonia*

## INTRODUCTION

The first five years of life are referred to as the golden period because they are a crucial time in a child's growth and development. These first five years are a very effective time to optimize a child's intellectual potential through gross and fine motor development, which will determine the child's future development into a high-quality human resource.(1) Children under five are a group that is vulnerable to disease. Children under five should be protected from diseases or health problems that can interfere with their growth and development and even lead to death. One of the highest causes of death from infectious diseases in children under five worldwide is pneumonia.(2) Pneumonia is an acute infection or inflammation that occurs in the lung parenchyma, distal to the terminal bronchioles, which includes the respiratory bronchioles and alveoli. Pneumonia causes consolidation of lung tissue and disrupts local gas exchange due to various microorganisms, such as bacteria, viruses, parasites, fungi, chemical exposure, or physical damage to the lungs.(3,4) Pneumonia is even referred to as The Forgotten Pandemic, because of the lack of attention to the problem of pneumonia even though it causes many deaths.(5)

In Indonesia, pneumonia has been one of the leading causes of death among children under five in recent years. In 2018, pneumonia caused the deaths of 425 children under five. In 2019, pneumonia was the second leading cause of death among children under five, with 551 deaths, accounting for 9.5% of total deaths among children under five. In 2020, pneumonia was the second leading cause of death in children under five, with 498 deaths, accounting for 5.5% of total deaths in children under five. In 2021, pneumonia was the second leading

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cause of death in children under five, with 444 deaths, accounting for 9.4% of total deaths in children under five.(6)

Surveillance data from the Indonesian Ministry of Health shows that in the 10-year period from 2011 to 2021, the number of pneumonia cases in children under five was higher than in the over-five age group. In 2018, of the 637,204 cases of pneumonia, 503,925 were cases of pneumonia in children under five. In 2019, out of 601,836 cases of pneumonia, 465,058 cases were cases of pneumonia in children under five years of age. In 2020, out of 460,210 cases of pneumonia, 320,925 cases were cases of pneumonia in children under five years of age. In 2021, out of 441,424 cases of pneumonia, 278,261 cases were cases of pneumonia in children under five years of age.(7)

In recent years, there has been a decline in the incidence of pneumonia among children under five in West Sumatra Province. However, the decline in the number of cases is inversely proportional to the mortality rate among children under five due to pneumonia, with an increase in deaths due to pneumonia in recent years. In 2018, in West Sumatra Province, 11,346 children under five suffered from pneumonia, and 365 of these cases were severe pneumonia, resulting in the deaths of 4 children under five. In 2019, there were 10,206 cases, 397 of which were severe pneumonia cases, resulting in the deaths of 2 infants. In 2020, 4,471 infants suffered from pneumonia, 259 of which were severe pneumonia cases, resulting in the deaths of 4 infants. In 2021, 3,595 children under five suffered from pneumonia, 183 of which were severe cases that resulted in the deaths of 9 children under five.(6)

The number of cases of pneumonia in children under five found and treated in

recent years in Padang City has increased significantly. In 2020, there were 702 cases of pneumonia in children under five, increasing to 707 cases in 2021. In 2022, out of 77,624 children under five, 2,148 cases of pneumonia were found out of an estimated 3,035 cases. Of the 2,148 cases of pneumonia in children under five in Padang City, 759 cases were found in community health centres, In 2023, pneumonia cases increased to 2,598 cases, with 928 cases found in community health centers. Pneumonia caused two deaths among children under five in 2021 and rose to nine deaths in 2022. Deaths from pneumonia in 2023 declined but not significantly, to eight deaths.(8)

Lubuk Begalung Community Health Center is the community health center in Padang City with the highest number of pneumonia cases among children under five over the past three years, with the number of cases consistently increasing each year. In 2023, the number of pneumonia cases at Lubuk Begalung Community Health Center reached 257 cases, an increase compared with 163 cases in 2022 and 97 cases in 2021.(8) In 2023, Lubuk Begalung Community Health Center recorded the highest prevalence of pneumonia among children under five in Padang City, at 4.59%.

Based on the survey and initial data collection conducted by the researcher by interviewing 10 mothers who had children diagnosed with pneumonia in 2024 at the Lubuk Begalung Community Health Center. Seven out of ten mothers had poor treatment-seeking behavior, where among the seven mothers, four chose alternative treatments before taking their children to the health center and the other three practiced self-medication, namely treating their children with medicines available at home and buying medicines from pharmacies without a

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doctor's prescription. Most children diagnosed with pneumonia in 2024 at the Lubuk Begalung Community Health Centre were older than 1 year. It was found that most mothers whose children were diagnosed with pneumonia in 2024 were older than 35 years. The average level of education of the mothers was high school/equivalent, and 6 of the 10 mothers worked. Based on the interview results, 70% of mothers had insufficient knowledge about pneumonia and poor behaviour in seeking treatment for pneumonia, 10% of mothers had difficult access to the Lubuk Begalung Community Health Centre, 50% of mothers had a negative socio-cultural attitude towards seeking treatment, and 40% of mothers had a low perception of the severity of pneumonia in children under five.

As a disease with known causes and treatments, there should be no deaths from pneumonia. Deaths among children under five due to pneumonia can be prevented through appropriate and timely interventions. Delays in seeking treatment or even a complete lack of treatment are factors that contribute to high child mortality rates. Health-seeking behaviour can be seen as a reflection of the implementation of the national health system and access to health services.(9) The way communities or individuals seek health services for their illnesses and health problems illustrates how health services are utilized in a region, which can ultimately be used to assess or describe the health status of the entire population.(10) Understanding the patterns of seeking treatment can inform issues of delays in seeking treatment.(11)

Seeking prompt medical treatment at health care facilities is very important in managing disease treatment.(12) Pneumonia is an infectious disease that causes the highest mortality rate among children under

five. Pneumonia can worsen rapidly and even lead to complications and death if not treated quickly and appropriately. If pneumonia is detected and treated within the first 24 hours after the onset of symptoms such as rapid breathing, infants can recover more quickly, the risk of disease severity is low, and the likelihood of complications and death is small.(13) Prompt and appropriate treatment, preferably within 24 hours of the onset of symptoms, will reduce severe morbidity and mortality in children under five years of age.(14) Pneumonia is unpredictable and complications can occur at any time. In most cases, the peak of pneumonia occurs during the grey hepatization stage, which is on the fourth to sixth day after the onset of symptoms. Research shows that the mortality rate of infants with pneumonia in the grey hepatization stage who are placed in the ICU (Intensive Care Unit) is around 15% to 50%.(15) Delaying seeking treatment for more than 2 days after the onset of pneumonia symptoms is a risk factor for death from pneumonia in children under five, and administering antibiotic treatment at home without a doctor's prescription before seeking treatment at a health facility also has a negative effect on the survival of children under five with pneumonia.(16)

Seeking prompt medical treatment for infants with pneumonia symptoms can prevent death and reduce the risk of severe pneumonia. However, based on UNICEF global data from 2023, progress in seeking help for children with pneumonia symptoms has been slow. In the last decade, the use of health services for children with pneumonia symptoms seeking treatment from health care providers has stagnated in many regions and declined in South Asia, the Middle East, and North Africa.(17) Research in Nepal shows that most mothers' behaviour in

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seeking treatment for pneumonia in infants is still inadequate. Of all respondents, only 11% of mothers had appropriate and prompt treatment-seeking behaviour. Research in Nigeria shows that 63% of mothers have poor treatment-seeking behavior for pneumonia in infants, and most choose pharmacies as their first place to seek treatment. Research in Nigeria shows that less than half (47.2%) of infants are taken by their mothers to health care facilities after symptoms of pneumonia appear.(18) Research in Ethiopia shows that 62.2% of mothers have poor treatment-seeking behaviour and only 13.17% of mothers choose public or private health care facilities as the first place to seek treatment for their infants.(19) Research in Uganda shows that 82% of mothers choose to seek alternative treatments and pharmacies before visiting health care facilities.(20)

Poor treatment-seeking behaviour for pneumonia in children under five is still high in Indonesia. Research in Yogyakarta shows that 48.9% of mothers have poor treatment-seeking behaviour for pneumonia in children under five.(21) Research in Purworejo Regency shows that 59.52% of mothers have poor treatment-seeking behaviour for pneumonia.(5) Research in Kaleroang Village shows that 76% of mothers seek initial treatment at health services managed by health workers, and among mothers who choose treatment provided by non-health workers, most choose to self-medicate (22)

Health-seeking behaviour is complex, and the decision-making process for treatment is dynamic and continuous, which can be influenced by various factors. Sreeramareddy's (2006) research in Nepal showed that mother's age had a significant relationship with health-seeking behaviour for children under five.(23) Opuba's research in Kenya shows that some mothers who

delay taking their children to health care facilities are aged > 35 years. This is because older mothers may have different perceptions of health and illness compared to younger mothers. They may be more likely to consider the early symptoms of illness as something that is not serious or does not need medical treatment, especially if they have gone through similar experiences with their previous children.(24) This is in line with Kante's (2015) research in Tanzania, which found that mothers aged > 35 years tend to provide home care/treatment when their children are sick rather than seeking treatment at health care facilities. This is likely because older mothers tend to rely on traditional or household approaches to address the health problems of their children under five.(25)

Based on the above description, the researcher was interested in examining the relationship between mother's age, toddler age, mother's education, mother's occupation, mother's knowledge, family income, access to health services, and perception of disease severity on the behaviour of seeking treatment for toddler pneumonia in the working area of the Lubuk Begalung Community Health Centre, Padang City.

## MATERIAL AND METHODS

### Research Design

This study uses an analytical research type with a cross-sectional design to examine the association between independent and dependent variables measured simultaneously. This design collects data from a population or sample at a certain point in time, without manipulation or intervention, with the aim of describing the characteristics or prevalence of a phenomenon at that time.

### Population and Sample

The study population consisted of all mothers of children under five who were diagnosed with pneumonia in Lubuk Begalung Community Health Centre from January to June 2024. The study sample included all mothers of children under five diagnosed with pneumonia at the Lubuk Begalung Community Health Centre who met the inclusion and exclusion criteria. The sampling technique used was simple random sampling. The sample size for this study was determined using the formula for testing the difference between two proportions.

### Data source

The data collected in this study were obtained from mothers of children under five diagnosed with pneumonia who were used as respondents. The variables used in this study consisted of: Dependent variable: Health seeking behaviour. Independent variable: Mother's age, child's age, mother's educational level, mother's occupation, mother's knowledge, family income, access to health care services, and perceived severity of the illness

### Data analysis

Data analysis used in this study includes Univariate analysis, Bivariate analysis using the chi-square statistical test and Multivariate analysis using binary logistic regression test. Both analyses were conducted with a 95% confidence level and a significance limit of p-value <0.05.

## RESULTS

Table 1 shows the frequency distribution of behaviour in seeking treatment for pneumonia in children under five at the Lubuk Begalung Community Health Centre, Padang City. Seeking treatment for pneumonia is considered good

if it meets two indicators, namely choosing a health care facility as the first choice of treatment and seeking treatment at a health care facility within 24 hours after the onset of pneumonia symptoms.

**Table 1. Health Seeking Behaviour in Pneumonia Children Under Five in Lubuk Begalung Health Center**

Health Seeking Behaviour	n=87	%
Poor	54	62,1
Good	33	37,9
<b>Total</b>	<b>87</b>	<b>100</b>

Table 1 shows that more than half of the respondents (62.1%) had poor health-seeking behaviour, while 37.9% had good health-seeking behaviour.

**Table 2. Mother's First Choice of Treatment for Pneumonia Among Children Under Five at Lubuk Begalung Health Centre**

Mother's First Choice of Treatment	n	%
Community Health Center	50	57,4
Midwife	8	9,1
Swamedication	20	22,9
Traditional treatment	9	10,6
<b>Total</b>	<b>87</b>	<b>100</b>

Table 2 shows that 50 respondents (57.4%) chose the community health centre as the mothers' first treatment option for children under five with pneumonia, 8 respondents (9.1%) chose a midwife as the initial treatment option, 20 respondents (22.9%) chose self-medication as the first treatment option, and 9 respondents (10.6%) chose traditional treatment as the mothers' first treatment option for children under five with pneumonia.

**Table 3. Mothers' Time to Seek Treatment at Health Care Facilities**

Mothers' Time to Seek Treatment	n	%
≤ 24 jam	36	41,3
> 24 jam	51	58,7
<b>Total</b>	<b>87</b>	<b>87</b>

Table 3 shows that 41.3% of mothers sought treatment at health care facilities within ≤ 24 hours after the onset of pneumonia symptoms, whereas 58.7% sought treatment at health care facilities more than 24 hours after symptom onset.

**Table 4. Descriptive analysis**

Variable	n=87	%
<b>Child's age</b>		
24-59 months	39	44,8
0-23 months	48	55,2
<b>Mother's age</b>		
≥ 35 years	45	51,7
0-34 years	42	48,3
<b>Mother's knowledge</b>		
Poor	38	43,7
Good	49	56,3
<b>Mother's Education</b>		
Low	58	66,7
High	29	33,3
<b>Mother's Occupation</b>		
Employed	42	48,3
Not Employed	45	51,7
<b>Family Income</b>		
Low (RMW < IDR 2,8 million)	35	40,2
High (RMW ≥ IDR 2,8 million)	52	59,8
<b>Access to Health Care Facilities</b>		
Difficult	7	8
Easy	80	92
<b>Perceived Disease Severity</b>		
Severe	45	51,7
Not Severe	42	48,3

Table 4 presents the univariate analysis results that show more than half of the respondents, namely 54 people (62.1%), had poor pneumonia treatment-seeking

behaviour, while 43 respondents (37.9%) had good pneumonia treatment-seeking behaviour.

The most common characteristics of respondents were based on age, with 51.7% being at risk; based on knowledge, with 43.7% having poor knowledge; based on final education, with 66.7% having a low

level of education (< high school); based on employment status, with 48.3% being unemployed; based on income, namely low income (< minimum wage) at 40.2%, based on access, namely difficult access at 8%, and based on perception of disease severity, namely perception of not severe at 51.7%

### Bivariate Analysis

**Table 5. Relationship Between Mother’s Age, Child’s Age, Mother’s Education, Mother’s Occupation, Mother’s Knowledge, Family Income, Access To Health Care Services, And Perceived Disease Severity With Health-Seeking Behavior For Pneumonia Among Children Under Five**

Variable	Health-Seeking Behaviour for Pneumonia among Children Under Five				Total		PR	p-value
	Poor		Good		f	%		
	f	%	f	%				
<b>Child’s age</b>								
24-59 months	23	59	16	41	39	100	0,913 (0,653-1,227)	0,753
0-23 months	31	64,6	17	35,4	48	100		
<b>Mother’s age</b>								
≥ 35 years	35	77,8	10	22,2	45	100	1,719 (1,190-2,483)	0,004
0-34 years	19	45,2	23	54,8	42	100		
<b>Mother’s knowledge</b>								
Poor	38	100	0	0	38	100	3,063 (2,049-4,578)	<0,0001
Good	16	32,7	33	67,3	49	100		
<b>Mother’s Education</b>								
Low	32	55,2	26	44,8	58	100	0,727 (0,534-0,991)	0,101
Hight	22	75,9	7	24,1	29	100		
<b>Mother’s Occupation</b>								
Employed	28	66,7	14	33,3	42	100	1,154 (0,8831-1,603)	0,527
Not Employed	26	57,8	19	42,2	45	100		
<b>Family Income</b>								
Low	18	51,4	17	48,6	35	100	0,743 (0,513-1,075)	0,146
High	36	69,2	16	30,8	52	100		
<b>Access to Health Care Facilities</b>								
Difficult	3	42,9	4	57,1	7	100	0,672 (0,281-1,607)	0,419
Easy	51	63,8	29	36,3	80	100		
<b>Perceived Disease Severity</b>								
Not Severe	34	75,6	11	24,4	46	100	1,587 (1,109-2,270)	0,014
Severe	20	47,6	22	52,4	42	100		

Bivariate test results show that variables associated with health seeking behaviour for pneumonia in children under five are mother’s age (p=0.004; PR=1.719; 95% CI: 1.190-2.483), mother’s knowledge (p=<0.0001; PR=3.063; 95% CI: 2.049-

4.578), and perceived disease of disease severity (p=0.014; PR=1.587; 95% CI: 1.109-2.270).

### Multivariate Analysis

Variables incorporated into the multivariable analysis included the primary independent variables and external factors that exhibited statistical significance at  $p < 0.25$  during the bivariate analysis. Multivariate analysis was performed to determine the most associated factors that influenced health-seeking behaviour for pneumonia among children under five using a binary logistic regression test with a 95% confidence interval (CI). For the selection of the final multivariate model, a backward elimination method was applied, in which all independent variables were initially entered into the model and subsequently tested. Variables with the least influence were removed sequentially based on hypothesis testing. Variables that were not statistically significant were excluded, while variables that showed a significant association remained in the final model.

**Table 6. Results of Binary Logistic Regression Analysis**

Variable	PR	p-value
Mother's knowledge	0,000	0,997
Mother's Education	5,936	0,037
Mother's Age	1,546	0,617
Family Income	16,406	0,017
Mothers Occupation	0,238	0,122

Multivariate analysis results show that the variable of health-seeking behaviour for pneumonia in children under five can be explained by factors such as mother's knowledge, mother's education, mother's age, mother's occupation, and family income. Based on the results of multivariate analysis, it is known that family income and

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mother's education is significantly related to the behaviour of health seeking behaviour for pneumonia in children number five after assessing the relationship of all factors studied in the independent variables. From the results of the analysis, the most influential independent variable on the behaviour of seeking treatment for pneumonia in children under five at the Lubuk Begalung Community Health Centre in 2024 is family income.

### DISCUSSION

The health seeking behaviour for pneumonia in children under five is one of the variables studied in this research. It is divided into two groups, namely good and poor treatment-seeking behaviour. This grouping is based on two indicators, there are the mother's first choice of treatment for children with pneumonia symptoms and the time required for respondents to visit a health care facility. Of the total 87 respondents, it can be seen that more than half of the respondents, namely 54 people (62.1%), had poor treatment-seeking behaviour for pneumonia. Based on the first choice of treatment, 50 respondents (57.4%) chose the community health centre as the mother's first choice of treatment for children under five with pneumonia. Based on the time it took for mothers to visit a health care facility, 51 mothers (58.7%) sought treatment at a health care facility > 24 hours after the onset of pneumonia symptoms.

Based on research conducted on mothers whose children were diagnosed with pneumonia, more than half of the respondents sought treatment at a health care facility more than 24 hours after the onset of pneumonia symptoms. This was because most mothers chose to self-medicate first, namely by using leftover medicines at home, buying medicines at a pharmacy with an old

prescription, buying medicines at a pharmacy without a doctor's prescription, and still using traditional medicine. Traditional treatments include seeking treatment from someone believed to be able to cure the disease and using recipes passed down from ancestors that are considered to relieve coughing and shortness of breath in children.

Seeking treatment within 24 hours at a health care facility is key to preventing death and complications in infants. However, this remains a challenge in many developing countries, including Indonesia. Poor health-seeking behaviour contributes to death and complications in infants, which could be prevented through prompt and appropriate health-seeking behaviour.

This study successfully demonstrated a relationship between the child's age and health seeking behaviour of pneumonia children under five in Lubuk Begalung Health Centre, Padang City. The variable of child age did not show a significant relationship with the health seeking behavior of pneumonia in children under five (p-value = 0.753). Although children aged 0–23 months are more susceptible to pneumonia and their health condition can deteriorate rapidly after infection, seeking treatment for pneumonia in children under five should still be done as soon as possible at a health care facility regardless of the child's age. This is because children aged 24–59 months are also at risk of complications and death if they do not receive timely treatment at a health care facility. These results are in line with the research by Bakare, et al (2023), which states that there is no significant relationship between the age of the child and the health seeking behaviour for pneumonia in children under five with a p-value = 0.796.(18)

The mother's age showed a significant relationship with the behaviour of seeking  
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treatment for pneumonia in infants (p-value = 0.004; PR = 1.719; 95% CI: 1.673–10.728). These results indicate that respondents aged  $\geq 35$  years are 1.719 times more likely to seek appropriate treatment for pneumonia than respondents aged 19–34 years. This finding is supported by a study by Opuba et al. (2021), which states that older mothers tend to consider early symptoms of illness as not serious or not requiring medical treatment, especially if they have experienced similar conditions in their children before. These findings are in line with the research by Titaley et al. (2020), which shows that there is a significant relationship between the mother's age and seeking treatment for pneumonia in children under five. The results of this study show that respondents aged  $\geq 35$  years assumed that they had adequate knowledge and skills in dealing with childhood illnesses from their previous experiences.(26) The results of this study are also supported by the results of Opuba et al. (2021), which show that older mothers tend to consider the early symptoms of illness as something that is not serious or does not need to be treated medically, especially if they have gone through similar conditions with their previous children.(24) From the results of the study, the mother's age is related to the behaviour of seeking treatment for pneumonia in children under five. This may be because mothers aged  $> 35$  years tend to use SW medication / traditional medicine first before taking their children to health care facilities, which results in children possibly receiving delayed treatment for pneumonia.

Mother's knowledge was significantly associated with the behaviour of seeking treatment for pneumonia in children under five (p-value  $< 0.0001$ ; PR = 3.063; 95% CI: 2.049–4.578). Respondents with low levels

of knowledge were 3.063 times more likely to exhibit poor behaviour in seeking treatment for pneumonia compared to respondents with high levels of knowledge. Knowledge plays a role in decision-making regarding timing and the first treatment option chosen by respondents. Knowledge about pneumonia symptoms is related to good treatment-seeking behaviour. Respondents who recognize the signs and symptoms of pneumonia take their children to health care facilities in a timely manner. The results of this study are in line with the research by Temsesgen, et al (2023) which shows that there is a significant relationship between mothers' knowledge and their behaviour in seeking treatment for pneumonia in children under five. This study shows that respondents who have less knowledge about pneumonia cause a significant delay in seeking treatment.(19) From the results of this study, mothers' knowledge of pneumonia is related to treatment-seeking behaviour. Mothers who have knowledge of the symptoms and signs of pneumonia in children generally have good health-seeking behavior for pneumonia. Knowledge about pneumonia is crucial, without recognizing the symptoms and signs of pneumonia in children, they may be at risk of delayed treatment, which can lead to complications and death.

Mother's education did not show a significant relationship with the behaviour of seeking treatment for pneumonia in infants (p-value = 0.101). These results are in line with Khasanah's (2023) study, which stated that there was no significant relationship between the mother's level of education and the behaviour of seeking treatment for pneumonia in infants. These findings indicate that mothers with low education still seek immediate treatment for pneumonia at health facilities. This is also supported by

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Phiona et al.'s (2023) study, which reported no significant relationship between mother's education and behaviour in seeking treatment for pneumonia in children under five.(20) In this study, mother's education was not significantly associated with seeking treatment for pneumonia in children because education only affects a mother's cognitive thinking, knowledge, and behaviour. Even if a mother's education level is low, if she actively seeks information through mass media or electronic media, her knowledge about pneumonia can increase, and if applied, it can prevent the severity of the disease and even death in children.

Mother's occupation was not significantly related to behaviour in seeking treatment for pneumonia in infants (p-value = 0.527). Working mothers potentially have more extensive information and better insight into health issues. However, working mothers of children under five are expected to continue to monitor their children's development, especially when playing outside the home, to avoid pneumonia. Even if mothers work, good time management and supervision can help control the risk of pneumonia. In addition, mothers are expected to be able to recognize their children's condition and symptoms of pneumonia so that they can take their children to health care facilities in a timely manner.(24) In this study, there was no significant relationship between the mother's occupation and her behaviour in seeking treatment for pneumonia in children under five. Working mothers may have better information and a broader perspective on health. Working mothers of children under five are expected to always monitor their children's development when playing outside the home so that children under five can avoid pneumonia. Even if a mother works, if there are rules, the risk of pneumonia can be

controlled. Working mothers are also expected to recognize and pay attention to their children's condition and symptoms related to pneumonia so that they can take their children to health care facilities in a timely manner.

Family income also did not show a significant relationship with the behaviour of seeking treatment for pneumonia in children under five (p-value = 0.146). These results are in line with the research by Temsesgen et al. (2023), which states that family income is not significantly related to the behaviour of seeking treatment for pneumonia in children under five. The study shows that mothers with low family income still seek immediate health services when their children show signs and symptoms of pneumonia.(19) The results of this study are also in line with the research by Phiona, et al (2023), which states that family income is significantly related to the behaviour of seeking treatment for pneumonia in children under five with a p-value = 0.002. This study explains that in some situations, family income causes the condition of children with pneumonia to deteriorate rapidly and tends to delay treatment at health care facilities.(20)

Access to health care facilities was not significantly related to the behaviour of seeking treatment for pneumonia in infants (p-value = 0.419). The insignificance of this result is thought to be due to the measurement of access to health care services, which did not fully describe the respondents' ability to access health services because it used certain categories in measuring the answers. In addition, the interview results showed that most mothers of children under five lived relatively close to the community health centre. This condition was supported by the working area of the Lubuk Begalung Community Health Centre, which is located in an urban area  
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with an area of approximately 12 hectares and is supported by adequate transportation access and good road conditions, making it easier for mothers of children under five to access health services.

Perceptions of disease severity showed a significant relationship with the behaviour of seeking treatment for pneumonia in children under five (p-value = 0.014; PR = 1.587; 95% CI: 1.109–2.270). Respondents who perceived pneumonia as not severe were 1.587 times more likely to seek less appropriate treatment for pneumonia than respondents who perceived pneumonia as a severe disease in children under five. These findings are supported by research by Sreeramareddy, which shows that the perception of disease severity is a predictor of seeking treatment for pneumonia in children. Respondents with a perception of mild severity are 2.46 times more likely to seek treatment for pneumonia in children.(23)

The results of this study are also supported by the research of Ferdous, et al (2014), which explains that the main reason parents delay taking their children to health care facilities is that they consider the illness not serious enough to require reporting to a health care facility. This may occur because shortness of breath/rapid breathing, which are symptoms of pneumonia, are considered not severe and are effects of the infant having coughed for a long time.(27) In this study, perception of disease severity was significantly associated with the behaviour of seeking treatment for pneumonia in children under five. Perception of disease severity is one of the crucial factors in the behaviour of seeking treatment. Perception of disease severity is a condition in which a mother recognizes the symptoms of disease in her child that make her alert and immediately take the child to a health care facility .

Individuals who feel that their child is seriously ill seek treatment more quickly than those who do not. Delays in taking children with symptoms of pneumonia to a health care facility can increase the risk of disease severity.

## CONCLUSION

Therefore, from the above explanation, Most mothers had poor health-seeking behaviour for pneumonia in children under five (62.1%). Good health-seeking behaviour was more common among mothers with children aged 0-23 months, aged 19-34 years, with low education, low family income, easy access to health facilities, and the perception that pneumonia is a severe disease. There is a significant relationship between mother's age, mother's knowledge, and perception of disease severity with health seeking behaviour of pneumonia children under five pneumonias at the Lubuk Begalung Community Health Center in 2024. The variable that most associated with the health behaviour of pneumonia children under five pneumonia was family income, with an Adjusted PR value of 16.406 and a p-value of 0.017 (p-value < 0.05). Mother's with low family income were 16.4 times more likely to have poor health seeking behaviour than mothers with high family income.

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