

The Effect of Alert Education (Respiratory Emergency Alert) on Increasing Parents' Knowledge about the Handling of ISPA in Children at the Telaga Biru Health Center

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ABSTRACT

Background: Acute Respiratory Tract Infection (ARI) is one of the leading causes of morbidity and mortality in children. The high incidence of ISPA in the Telaga Biru Health Center work area shows the need for efforts to increase parental knowledge in carrying out appropriate initial handling. SIGAP Education (Respiratory Emergency Alert) is one of the health education innovations designed to improve parental preparedness in dealing with respiratory disorders in children.

Objective: This study aims to determine the effect of SIGAP (Respiratory Emergency Alert) education on increasing parents' knowledge about the handling of ISPA in children at the Telaga Biru Health Center.

Methods: This study used a quantitative method with a pre-experimental design of one group pretest-posttest. The research was carried out at the Telaga Biru Health Center in January-February 2026. The research sample amounted to 44 parents who had children with ARI. Data were collected using a knowledge questionnaire and analyzed using a paired t-test.

Results: The results showed that before being given SIGAP education, most of the respondents had a moderate level of knowledge of 21 people (47.7%), 20 people (45.5%) of high knowledge, and 3 people of low knowledge (6.8%). After being given SIGAP education, the majority of respondents had a high level of knowledge of 41 people (93.2%) and a medium level of knowledge of 3 people (6.8%). The results of the paired t-test showed an increase in the average knowledge value from 2.39 ± 0.618 to 2.93 ± 0.255 with a p value of < 0.001 , which shows a significant influence of SIGAP education on increasing parental knowledge about the treatment of ISPA in children.

Conclusion: SIGAP (Respiratory Emergency Alert) education has proven to be effective in increasing parents' knowledge about the handling of ISPA in children at the Telaga Biru Health Center. This educational program can be used as one of the health promotion strategies to increase family preparedness in dealing with respiratory disorders in children.

INTRODUCTION

Acute respiratory infections (ARI) are one of the main causes of high rates of illness and death in children under five worldwide. Each year, it is estimated that about 6.6 million children under the age of five die, and 95% of these cases occur in low-income countries. About one-third of the total deaths were caused by ISPA. In fact, ISPA is estimated to account for nearly 20% of all deaths of children under five globally. The number of children under five with ISPA who receive adequate care in health facilities is an important indicator in assessing the coverage of interventions and access to health services. In addition, this data also provides important input in monitoring the progress of achieving the goals of the Millennium Development Strategy, especially related to child survival (Juairiah & Yulianti, 2022).

According to the World Health Organization (WHO), globally, Acute Respiratory Infections (ARIs) account for nearly one-fifth of all deaths in children under the age of five. The number of toddlers with ISPA

receiving treatment in health facilities is an important indicator to assess the scope of intervention and access to services. The data also plays a role in monitoring the achievement of the Millennium Development goals which focus on improving children's survival (WHO, 2020).

Based on the 2023 Indonesian Health Survey (SKI), a number of provinces in Indonesia are still facing a fairly high number of ISPA cases. West Java, East Java, and Central Java are the regions with the highest number of cases. This high number is related to the dense population and environmental factors that support the spread of the disease. Air pollution, inadequate sanitation, and unhealthy housing conditions have all exacerbated the situation. Urban areas with high pollution levels, such as DKI Jakarta and parts of West Java, are also recorded to have more cases of ISPA than other regions (Health Development Policy Agency, 2023).

Based on data from the Gorontalo Provincial Health Office, in 2024 there will be 76,600 residents experiencing Acute Respiratory Infections (ISPA) spread across various regions, including Gorontalo City as many as 24,059 people, Gorontalo Regency 16,354 people, Bone Bolango Regency 11,127 people, Boalemo Regency 5,040 people, Pohuwato Regency 6,285 people, and North Gorontalo Regency as many as 7,223 people and as many as 33,275 children with Acute Respiratory Infection (ISPA) disease in Gorontalo Province (Gorontalo Provincial Health Office, 2024).

Data from the Gorontalo Regency Health Office in 2024 shows that the number of patients with Acute Respiratory Infections (ISPA) reaches 19,025 people spread across various health centers. Of these, 7,487 cases occurred in children. The highest number of patients with Acute Respiratory Infection (ARI) was found at the Telaga Biru Health Center with a total of 2,844 cases of ARI, and as many as 1,200 of them were children with ARITA (Gorontalo Regency Health Office, 2024).

Based on data from the Telaga Biru Health Center, it is known that the number of people with ISPA in children in 2021 was 1,007 people, in 2022 as many as

1,062 people, in 2023 there will be 1,130 people and in 2024 it will reach 1,200 people. The data shows that ISPA disease in children at the Telaga Biru Health Center from 2021 to 2024 has increased every year. This increase shows that cases that continue to occur from year to year are a strong basis that education-based interventions are needed to increase parents' awareness and skills in dealing with ISPA independently at home before the child's condition worsens (Telaga Biru, 2025).

The high number of cases is suspected to be caused by the low knowledge of parents about the disease of ISPA in children. Lack of health education causes many parents to be unable to recognize the early signs of the disease. In addition, they also lack understanding of the importance of preventive measures, such as maintaining environmental cleanliness, ensuring good home ventilation, and providing adequate nutritional intake to children. The habit of parents who often smoke indoors also worsens air quality and increases the risk of children being exposed to cigarette smoke pollution. This condition has an impact on delayed treatment and increases the risk of more serious complications (Setyawan et al., 2024).

Based on the results of initial observations conducted at the Telaga Biru Health Center, it is known that of the 10 parents who have children and have been interviewed, all of them admitted that they did not know the initial handling actions that should have been taken. In addition, the lack of parental knowledge about the early signs and symptoms of ISPA in children, such as cough, difficulty breathing, rapid breathing, and fever, is also a worrying factor. Parents also tend not to understand how the transmission of ISPA disease occurs. One of the risk factors that is quite significant is exposure to cigarette smoke, the habit of parents who still smoke while holding children, which can worsen conditions and can increase the risk of ISPA in children. This ignorance reflects the low level of parental knowledge about children's ARI. This condition can cause delays in treatment, increase the risk of complications, and affect the high incidence of ISPA in children in the region. The results of this observation reinforce the need for educational innovations that are easier to understand, practical, and able to improve parental preparedness in dealing with respiratory disorders in children (Telaga Biru, 2025).

One form of health education innovation that is relevant to answer these challenges is the SIGAP (Respiratory Emergency Alert) education program. This program was developed as a community empowerment strategy to be more prepared and responsive in dealing with respiratory emergencies, especially in children who are vulnerable to experiencing ISPA. Through a simple and applicable approach, SIGAP is expected to be an effective means of improving parental knowledge and skills related to the early treatment of respiratory disorders (Hasan et al., 2023).

This SIGAP (Respiratory Emergency Alert) education provides an understanding of how to recognize the early symptoms of respiratory distress, the right first aid steps, and when to immediately take the child to a health facility. With adequate knowledge, people become more alert and not panic when facing respiratory emergencies, so the risk of complications and death can be minimized. This education can also make it easier for parents to make quick and accurate decisions when children show signs of respiratory distress. In addition, SIGAP education encourages clean and healthy living behaviors and strengthens the involvement of families and health cadres in promotive and preventive efforts in the surrounding environment (Miniharianti et al., 2023).

SIGAP (Respiratory Emergency Alert) is a health education innovation that is urgently needed today, considering the low knowledge of the public, especially parents, in recognizing and handling respiratory emergencies in children. Delayed treatment often leads to serious complications and even death (Raodah &

Handayani, 2022). SIGAP is designed to answer these needs with an educational approach that is simple, easy to remember, and can be directly applied by the general public in emergency situations before medical help arrives (Retnaningrum & Rahmawati, 2025).

The SIGAP (Respiratory Emergency Alert) educational method is an educational approach consisting of five steps, namely: Be aware of the symptoms, Identify the cause, Move the patient to a comfortable position, Access medical assistance, and First aid while waiting. This method aims to increase the knowledge and preparedness of parents, especially mothers, in dealing with respiratory emergencies in children, such as ISPA, through education on early symptoms, causes, appropriate initial actions, and emergency handling while waiting for medical personnel (Ainy, 2022).

Based on research (Tampubolon, 2023) entitled "The Effect of Counseling Using Leaflets on Parents' Knowledge of ISPA in Toddlers at the Sadabuan Health Center" shows that before the intervention, the majority of respondents (75.8%) had less knowledge, while after being given counseling using leaflet media, as many as 88.7% of respondents have good knowledge. The results of the Wilcoxon test showed a significant change with a value of $p = 0.000$ ($p < 0.05$) and an average difference in knowledge score increase of 2.49. This proves that counseling using leaflet media is effective in increasing parents' knowledge about ISPA in toddlers. This education is important as a promotive and preventive effort so that parents are able to recognize, prevent, and deal with ISPA early in the family environment.

Based on a study (Alwi et al., 2023) with the title "The Effect of Module-Based Education for Efforts to Prevent Acute Respiratory Tract Infections on the Level of Knowledge of Mothers at Posyandu Paccinongan Work Area of Tino Health Center, Jenepono Regency" showed that before being given education, all respondents (100%) had a low level of knowledge about the prevention of ARI. After being given module-based education, as many as 96.4% of respondents showed an increase in being knowledgeable, and only 3.5% were still knowledgeable. The results of the paired t-test showed a value of $p = 0.000$ ($p < 0.05$), which means that there is a significant influence between module-based education and increased maternal knowledge about the prevention of ISPA. Module-based education has proven to be effective in increasing the knowledge of mothers at Posyandu Paccinongan, which is expected to encourage behavior change in efforts to prevent ISPA in children under five.

RESEARCH METHODS

Research Location and Research Time

The location of this research was carried out at the Telaga Biru Health Center. The time of this research was carried out in January 29 – February 14, 2026

Research Design

This research is a type of quantitative research with a research design using pre-experimental where an initial assessment of the sample knowledge is carried out and then reassessed after being educated. Then the type of design used is one group pretest-posttest (Abduh et al., 2022). This research involves one group, namely the provision of SIGAP (respiratory emergency alert) education which aims to test the influence of SIGAP (Respiratory Emergency Alert) education on knowledge in an effort to increase knowledge about the initial treatment of the occurrence of mental health disorders in children.

Population and Sample

Population is the entire group or entire object that is targeted in a study. Populations include all individuals or elements that have certain characteristics that researchers want to study (Subhaktiyasa, 2024). The population in this study is all parents who have children suffering from ISPA disease at the Telaga Biru Health Center which totals 1,200 people. In this study, the researcher set a sample number of 40 respondents, then added 10% to anticipate the possibility of dropping out.

Data Analysis Techniques

Univariate Analysis

Univariate analysis was used to describe the level of knowledge of parents before and after being given SIGAP education. Data were presented in the form of minimum, maximum, mean, median, and standard deviation scores for both pre-test and post-test scores in the intervention group.

Bivariate Analysis

Bivariate analysis was conducted to determine the effect of the relationship between independent variables (SIGAP education) and dependent variables (the level of knowledge of ISPA parents in children).

RESULTS**Respondent Characteristics****Characteristics of Respondents Based on Parental Age****Table 1 Distribution of Respondent Characteristics Based on Parental Age**

Yes	Age	Quantity (n)	Percentage (%)
1	Adults 19-44 years old	38	86.4
2	Pre-Elderly 45-59 Years Old	6	13.6
Total		44	100%

Based on Table 1, it is known that out of a total of 44 parents who have children aged 0-9 years, most of the respondents are in the age range of 19-44 years, which is as many as 38 people (86.4%).

Characteristics of Respondents Based on Child Age**Table 2 Distribution of Respondent Characteristics Based on Child Age**

Yes	Child's Age	Quantity (n)	Percentage (%)
1	Neonatal and Infants 0-11 Months	4	9.1
2	Toddlers 1-5 Years	20	45.5
3	Preschoolers 6-7 years old	9	20.5
4	Children 8-10 years old	11	25.0
Total		44	100%

Source: Primary Data, 2026

Based on Table 2 on the distribution of respondent characteristics based on the age of the child, it can be seen that most of the respondents have children in the age group of 1-5 years, which is as many as 20 people (45.5%). This shows that the majority of respondents in this study have children under five.

Distribution of Knowledge Level of *Pre-Test* Respondents Given Health Education**Table 3 Distribution of Knowledge Level *Pre-Test* Respondents Given Health Education**

Yes	Knowledge Level	Quantity (n)	Present (%)
1	Low (0-5)	3	6.8
2	Medium (6-10)	21	47.7
3	Height (11-15)	20	45.5
Total		44	100%

Source: Primary data, 2026

Based on table 3, it can be seen that of the 44 parents who were measured at the level of knowledge before being given health education, the results were that the parents were well-informed, namely 20 people (45.5%), the respondents who were knowledgeable were 21 people (47.7%), and the low-knowledge respondents were 3 people (6.8%) with an average value (*mean*) of 10.45.

Distribution of Respondents' Knowledge Level After Being Given Health Education**Table 4. Distribution of Knowledge Level *Post-Test* Respondents Given Health Education**

Yes	Knowledge Level	Quantity (n)	Present (%)
1	Medium	3	6.8
2	Height	41	93.2
Total		44	100%

Source: Primary data, 2026

Based on Table 4, it can be seen that out of 44 parents who were measured at the level of knowledge after being given health education, the results were that all respondents had high knowledge as many as 41 people (93.2%) and those who had moderate knowledge as many as 3 people (6.8%).

Bivariate Analysis

Bivariate analysis is a data analysis method used to examine two variables to find out the relationship between them. Based on research conducted on parents who have children with mental illness at the Telaga Biru Health Center, a bivariate analysis was conducted to determine the effect of SIGAP (Respiratory Emergency Alert) education on parental knowledge. Bivariate analysis in this study used a *paired t-test* with the SPSS version 26 program to find out.

Table 5 *Paired T-Test* Test for Parents Who Have Children with ISPA at Telaga Biru Health Center

Variable	N	Red ± SD	Average Change	p - value
Pre Test	44	2.39 ± 0.618	0,545	<0.001
Post Test	44	2.93 ± 0.255		

Source: SPSS Data Version 26

Based on Table 5, it shows that before the SIGAP (Respiratory Emergency Alert) health education intervention, the average knowledge of the respondents was 2.39 ± 0.618 . After being given SIGAP educational interventions, the average knowledge of respondents increased to 2.93 ± 0.255 . Thus, there was an average increase of 0.545. The *p-value* obtained was <0.001 , where $p < \alpha$ (0.05), so it can be concluded that there was an increase in respondents' knowledge after being given health education and SIGAP.

DISCUSSION

The level of knowledge of parents before being given SIGAP (Respiratory Emergency Alert) education

Based on the results of a study conducted on 44 parents at the Telaga Biru Health Center, it was found that most of the respondents had a level of knowledge in the medium category of 21 parents (47.7%). This shows that before being given SIGAP education, the majority of parents already have basic knowledge about ISPA, but have not fully understood the appropriate initial treatment when a child has a respiratory disorder.

Based on the results of the pre-test questionnaire answers, where most of the respondents could only answer in the knowledge section, namely about toddlers being more susceptible to ISPA because their immune system has not been fully developed according to item number 3. The question is related to basic knowledge about ISPA which is generally more often known by parents. Meanwhile, on other questions related to the prevention and early handling of ISPA, there are still many respondents who have not answered correctly. The majority of respondents also reported that they still did not know about the initial treatment of ISPA in children at home.

In table 4.2, most parents who have children with ISPA are in the age range of 19-44 years (86.4%). This age range is classified as a reproductive age category which is biologically and psychologically at the stage of maturity in carrying out the role of parenting. This is in line with Huru (2025) at this age, parents generally have a more mature mindset, are more open to new information, and are able to carry out parenting responsibilities more optimally compared to those who are younger and older.

Research conducted (Sari et al., 2021) states that the level of parental knowledge is greatly influenced by age characteristics, where adults have the ability to receive better information, but still need health education to increase understanding of the prevention and treatment of ISPA in children. In addition, (Saldi et al., 2022) also explained that parental knowledge that is not optimal can affect the prevention behavior of ARI, so it is necessary to provide appropriate health information so that parents are able to take appropriate actions when children experience symptoms of ARI.

Based on the results of a study conducted on 44 parents at the Telaga Biru Health Center, it was found that some respondents had a high level of knowledge in the high category, namely 20 parents (45.5%). This shows that before being given SIGAP education, there were already parents who had a good understanding of ISPA in children. This high level of knowledge can be seen from the results of the pre-test questionnaire, where respondents are able to correctly answer most of the questions which include definitions, signs and symptoms, prevention, and early treatment of ISPA in children.

In table 4.3, based on the level of education of the parents in this study, most of them have the last level of high school education as many as 19 parents (43.2%). According to research (Asil et al., 2025), the level of education is one of the factors that can affect a person's knowledge. Individuals with higher levels of education

generally have better abilities in receiving, understanding, and processing health information. This is in line with research (Berfilda et al., 2024) which shows that education level has a significant relationship with health literacy, where individuals with college and high school education have higher levels of health literacy than individuals with primary education.

Education level plays an important role in shaping a person's knowledge, including parents' knowledge of ISPA in children. The higher the level of education, the better the individual's ability to receive, understand, and process the health information obtained. According to research (Saldi et al., 2022), parents with secondary and higher education tend to have better health literacy so that it is easier to understand efforts to prevent and handle ISPA in children.

This research is also in line with Putri (2022) who stated that there is a relationship between education level and parental knowledge of the incidence of ISPA in toddlers. The study explained that the higher the level of education, the better the knowledge parents have about ISPA in children.

Based on the results of a study conducted on 44 parents at the Telaga Biru Health Center, it was found that a small percentage of respondents had a low level of knowledge, namely 3 parents (6.8%). This low knowledge can be influenced by the limited health information received and the lack of experience of parents in obtaining education about the prevention and treatment of ISPA in children.

These findings are in line with research by Kartini (2020) which shows that low parental knowledge and behavior about ISPA is related to an increase in the incidence of ISPA recurrence in toddlers. The study explained that parents who do not understand the risk factors, prevention, and early treatment of ISPA tend to be less appropriate in caring for children, thus increasing the likelihood of recurrence. This shows that the lack of information received by parents can affect understanding and actions in the prevention and handling of ISPA in children.

The level of parental knowledge about the prevention and treatment of ISPA in children is influenced by age, education level, and access to information. Reproductive age shows maturity in thinking and parenting experience, but does not always guarantee a high level of knowledge without adequate information. This is in line with research conducted by Silitonga (2024) showing that factors that affect knowledge include age, education, experience, occupation, and information sources obtained by individuals. Age is related to the maturity of thought patterns and life experiences, while education level affects a person's ability to receive, understand, and process health information.

Based on the explanation above, the researcher assumes that parents' knowledge of ISPA disease is not only influenced by the level of education, but also influenced by age and experience in parenting.

Increasing parents' knowledge after being given SIGAP (Respiratory Emergency Alert) education

Based on the results of a study conducted on 44 parents at the Telaga Biru Health Center, the post-test results showed that as many as 41 parents (93.2%) had a high level of knowledge about the handling of Acute Respiratory Infection (ARI) in children after being given SIGAP education. This improvement illustrates the success of educational interventions in increasing parents' understanding of symptoms, causes, and appropriate initial actions to treat children's ARI.

Based on the results of the post-test questionnaire, it shows that the majority of respondents have found out that ISPA can be caused by viruses or bacteria according to item number 2. In addition, most parents also understand that complying with the treatment program for ISPA disease is part of parents' efforts to provide health care to children according to item number 15. The high level of knowledge can also be influenced by the characteristics of the respondents, one of which is the gender of the parents.

In table 3 based on Parental Work, the majority of respondents in this study are housewives (IRT). The type of job can affect a person's ability to obtain and receive health information. Respondents who spent more time at home had a greater opportunity to follow the education process optimally and pay attention to the child's health condition in daily life (Wiryadi et al., 2020).

Housewives also tend to be more often directly involved in childcare and care, so that educational materials about the initial handling of ISPA are easier to understand and apply. In addition, interaction with the surrounding environment can be an additional source of information and experiences related to children's health (Wiryadi et al., 2020). The availability of more flexible time allows respondents to exchange experiences and obtain information from health workers, families, or the surrounding community. This condition can support the improvement of respondents' knowledge after being given SIGAP education (Maratul, 2022).

According to Umami (2024) who states that work can affect a person's access to health information. This is also in line with research (Berfilda et al., 2024) which shows that parents who are active in childcare tend to have better knowledge about the prevention and treatment of ISPA in children.

Based on the results of a study conducted on 44 parents at the Telaga Biru Health Center, it was found that most parents had a low level of knowledge. Although the majority of respondents showed an increase in knowledge, there were 3 parents (6.8%) who were still in the low knowledge category after being given SIGAP education. This can be caused by several factors, both related to the individual's ability to understand the material and previous limitations in basic knowledge.

Based on the results of the Post-Test questionnaire, respondents with low knowledge do not fully understand that children who do not receive complete immunization are more at risk of developing ISPA according to item number 6. In addition, they also do not know that the way to prevent the transmission of ISPA in children can be done through a healthy lifestyle according to item number 7. The lack of understanding in these aspects makes it difficult for them to absorb all SIGAP educational materials optimally.

According to Kartini (2020), the low knowledge of parents about children's health, especially related to Acute Respiratory Tract Infection (ARI), can be one of the factors that affect the high risk of ISPA in children. This can be seen from the fact that there are still parents who do not fully understand the risk factors, signs and symptoms, as well as efforts to prevent ARI.

In addition to parental knowledge, the age characteristics of children also affect susceptibility to the incidence of ARI. In Table 4.6, based on the gender of children, most children are in the age group of 1-5 years, which is as many as 20 children (45.5%). This age group is the pre-school period to the beginning of elementary school. According to Billa et al (2023), it is stated that at that age, the child's immune system has not developed optimally, so the body's resistance to viruses and bacteria that cause ISPA is still relatively low. In addition, children in this age range tend to interact more actively with the surrounding environment, both at home, school, and playground, thereby increasing the risk of disease transmission through droplets and direct contact with sufferers.

According to research by Piwiliyah (2023), it shows that mothers' knowledge and attitudes are related to the handling of ISPA in toddlers. Good knowledge improves the mother's ability to recognize symptoms and carry out early treatment, while a positive attitude encourages quick decision-making in seeking medical help. Thus, both play an important role in supporting the appropriate handling of ISPA in children.

This research is in line with Aisyiah (2023) who stated that the age of children is one of the factors related to the incidence of ARI. Children at younger ages, especially toddlers and preschool age, have a higher risk of developing ISPA due to immature immune systems and high social interaction activities that facilitate the transmission of infection.

Analysis of the influence between SIGAP (Respiratory Emergency Alert) education and increasing parents' knowledge in dealing with ISPA disease in children

Based on the results of the paired t-test, it showed that before being given SIGAP education, the average value of parental knowledge was 2.39 ± 0.618 . After being given SIGAP education, there was a change where the average value of knowledge increased to 2.93 ± 0.255 . Thus there was an average change of 0.545. With a p value of < 0.001 , where $p < \alpha$ (0.05) was obtained, so it was concluded that H1 was accepted, meaning that there was an Effect of SIGAP Education (Respiratory Emergency Alert) on Increasing Parents' Knowledge about the Handling of ISPA in Children at the Telaga Biru Health Center.

SIGAP educational interventions using leaflet media have proven to be effective in increasing parents' knowledge about the prevention and treatment of ISPA in children. The delivery of material using leaflets serves as a supporting medium that can be read again by parents after educational activities. The media makes it easier for respondents to understand risk factors, signs and symptoms, as well as efforts to prevent ARI, so that parents' knowledge increases after being educated.

This is in line with Andayani's (2024) research that providing health education by utilizing leaflet media is considered effective in increasing respondents' knowledge levels related to health promotion. This is because leaflets are printed media that present information in a concise, clear, and easy-to-understand manner, making it easier for respondents to receive the message conveyed.

According to research by Ichsan Trisutrisno (2022) which states that the success of counseling is greatly influenced by the way of delivering material that is interesting, not monotonous, and the use of methods that are easy for the target to understand. In this study, the health education method used is the face-to-face method, which is the process of delivering information that is carried out directly by interacting and dealing with respondents. In this study, the provision of health education with the SIGAP approach showed an increase in parental knowledge about the prevention and treatment of ISPA in children. Before the intervention, some respondents still had knowledge in the medium and low categories, but after education there was an increase shown through the post-test results to be high and medium. These findings are in line with the research of Juairiah & Yulianti (2022) which states that health education has a significant effect on increasing parents' knowledge about the prevention and management of ISPA in children.

The effectiveness of SIGAP education is in line with Tampubolon's (2023) research on the effect of education using leaflet media on parents' knowledge of ISPA in toddlers, with a significant change with $p=0.000$ ($p<0.05$). This shows that there is an Effect of Counseling Using Leaflets on Parents' Knowledge of ISPA in Toddlers.

The same results were also obtained from the research of Alwi et al (2023) which stated that maternal knowledge can be influenced by the health education carried out, with the results of statistical tests showing an average difference of -1,019 with a standard deviation of 1,770 and a p-Value value = 0.000 (<0.05), thus showing that there is a significant relationship between Health Education and maternal knowledge about ISPA in toddlers.

The effectiveness of SIGAP education is also related to the characteristics of the respondents in this study. The majority of respondents are in early to middle adulthood (26–35 years) and have a high school education, so they have a good enough ability to receive and understand health information. This condition supports the success of education because individuals at that age tend to be more open to new information and able to process information well. This is in line with research by Arianti et al (2022) who stated that parental knowledge has a significant relationship with the incidence of ISPA in children, where the better the knowledge, the better the prevention efforts made.

The use of educational media such as leaflets in the delivery of SIGAP materials also affects the increase in respondents' knowledge. The media helps convey information more clearly, systematically, and easily understand, so that respondents can more easily remember and apply the information provided. Thus, the increase in knowledge after the intervention not only showed the effectiveness of the SIGAP educational method, but was also supported by previous research and was influenced by the characteristics of the respondents and the appropriate method of information delivery.

CONCLUSION

Based on the results of the pre-test, most of the respondents were 21 respondents (47.7%) with moderate knowledge, as many as 20 respondents (45.5%) with high knowledge, and 3 respondents (6.8%) with low knowledge.

Based on the post test, most of the respondents were 41 respondents (93.2%) who had high knowledge and 3 respondents (6.8%) had moderate knowledge.

From the results of data analysis using SPSS Version 26, it was found that there was a statistically significant difference between pre test and post test scores with a p value of < 0.05 , pre test and post test p values of < 0.001 , where $p < \alpha (0.05)$ was obtained, so it was concluded that H1 was accepted, meaning that the effect of SIGAP (Respiratory Emergency Alert) education on increasing parents' knowledge about ISPA disease management at the Telaga Biru Health Center.

ADVICE

It is hoped that the results of this research can be used as a reference for reading and additional material in the library, and can be used as a reference material for future researchers related to SIGAP (Respiratory Emergency Alert) health education and the handling of ISPA in children.

It is hoped that the results of this study can increase parents' knowledge about the initial treatment of ISPA disease in children, especially in recognizing respiratory danger signs and appropriate handling steps. In addition, parents are expected to be able to apply the information that has been provided in their daily lives as an effort to prevent and treat early ISPA in children.

It is hoped that the results of this study can be a source of information and consideration for health workers in the work area of the Telaga Biru Health Center in developing health promotion programs, especially related to SIGAP education to increase parents' knowledge in handling ISPA in children.

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