Mothers' Knowledge About Basic Immunisation in Infants

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Basic Immunisation; Maternal Knowledge; Child Health; Extension Program; Health Education.

ABSTRACT
Purpose: This study aims to determine the level of mothers' knowledge about primary immunization for infants in the working area of Puskesmas Kassi-Kassi Makassar City.

Research Design and Methodology: This study used a quantitative method with a descriptive approach. Data were collected through distributing questionnaires to 37 mothers who had babies aged 0-12 months and visited the Kassi-Kassi Health Centre in February 2023. The sampling technique was accidental sampling.

Findings and Discussion: The results showed that most mothers had good knowledge about primary immunization, including its definition, purpose, and benefits. The level of education and access to adequate information influence this knowledge. Most respondents knew immunization protects infants and children against tuberculosis, pertussis, hepatitis, measles, and poliomyelitis. However, some mothers still have poor knowledge, which is caused by low education levels and lack of access to information.

Implications: This study makes an essential contribution to the field of public health by demonstrating the relationship between education level, access to information, and mothers' knowledge about immunization. These results can inform the development of more effective health education policies and programs. This study also highlights the importance of continued support from health workers in providing counseling on primary immunization. Further efforts are needed to improve mothers' immunization knowledge through intensive and comprehensive extension programs.

Introduction
Immunization is a significant effort to provide immunity to infants and children by introducing vaccines into the body. Through immunization, it is hoped that the body can form anti-substances that effectively prevent the threat of certain diseases so that children can grow and develop properly and obtain complete immunization (Anggraeni et al., 2022). However, based on Riskesdas (2018) data, immunization coverage in children aged 12-25 months in 2018 showed that only 57.9% of children received complete immunization, while 32.9% of children did not receive complete immunization, and 9.2% of children were not immunized at all (Riskesdas team, 2018). This indicates that many children still need complete primary immunization, thus showing the need for more attention to increase immunization coverage. The government's program to tackle the issue of immunization completeness has been carried out with various efforts. One of the steps taken is to meet the logistical needs of vaccines and provide vaccines for free so that people are not burdened with costs when immunizing their babies (Mustika et al., 2019). In addition, the government also ensures access to immunization services in hard-to-reach areas by working with other cross-sectors, ensuring vaccine availability, training health workers, and increasing public knowledge through media and public service announcements to educate and expand access and coverage of immunization.
Several recent studies have examined various factors that influence immunization coverage. Harris (2018) found that immunization coverage declined from 2013 to 2018 due to a need for more public knowledge. Studies by Hasanah (2021) and Arinda & Angela (2022) revealed that lack of information and knowledge about the importance of complete primary immunization is why infants do not get complete immunization. Astuti and Nardina's (2020) study emphasized that maternal knowledge is essential in achieving optimal immunization coverage. In addition, Mustika, Dewi, and Prasetyaningati (2019) examined the government's efforts to ensure immunization completeness through free vaccines, training for health workers, and educational campaigns through various media. Despite these efforts, the results showed that community knowledge still needs to improve immunization coverage. These studies state the importance of knowledge as a critical factor. However, only some studies, such as Puskesmas Kassi-Kassi Makassar City, still examine mothers' immunizations. This study aims to fill that gap by providing a more specific picture of mothers' knowledge of complete primary immunization in the area.

Although various studies have been conducted to understand the factors that influence immunization coverage, there still needs to be more in-depth studies of mothers' knowledge of complete primary immunization, especially in the working area of Puskesmas Kassi-Kassi Makassar City. Studies by Harris (2018) and Hasanah (2021) showed that low knowledge is a significant barrier to achieving optimal immunization coverage. However, these studies did not specifically explore mothers' knowledge in the local context of Puskesmas Kassi-Kassi. Furthermore, while educational efforts have been made, as reported by Astuti and Nardina (2020), studies have yet to investigate these programs' effectiveness in detail. This study aims to fill this gap by examining the factors influencing mothers' knowledge of complete primary immunization for infants and providing strategic recommendations based on empirical data. Thus, this study not only complements the existing literature but also provides practical insights that can be used to improve immunization programs in the working area of Puskesmas Kassi-Kassi Makassar City.

Based on the problems found and gaps in previous studies, this study aims to examine further how the description of mothers' knowledge about complete primary immunization in infants in the working area of Puskesmas Kassi-Kassi Makassar City. This study also aims to identify factors influencing mothers' knowledge about immunization and provide strategic recommendations to improve knowledge and coverage of complete primary immunization. The research questions posed in this study are: What is the description of mothers' knowledge about complete primary immunization of infants in the working area of Puskesmas Kassi-Kassi Makassar City? What factors influence mothers' knowledge of complete primary immunization in the area? Based on these questions, the purpose of this study is to determine the description of mothers' knowledge about complete primary immunization in infants in the working area of Puskesmas Kassi-Kassi Makassar City and to identify factors that influence mothers' knowledge about complete primary immunization in the area. This study has a novelty in examining specifically the description of mothers' knowledge about complete primary immunization in infants in the working area of Puskesmas Kassi-Kassi Makassar City. In addition, this study will also provide strategic recommendations based on empirical findings that are expected to help increase the coverage of complete primary immunization in the region.

**Literature Review**

**Overview of immunisation**

Immunization is one of the most successful and effective public health interventions in history, playing a crucial role in protecting individuals from infectious diseases (Djati, 2023). Immunization works by introducing vaccines into the body that aim to form an anti-substance to prevent immunization-preventable diseases such as polio, measles, hepatitis B, tetanus, pertussis, diphtheria, pneumonia, and meningitis. Mandatory basic immunizations include Hepatitis B, BCG, DPT-HB-Hib, polio, and measles. Booster (follow-up) immunization aims to maintain immunity levels in children under two years old, school-age children, and women of childbearing age (WUS), including pregnant women. The targets of booster immunization are DPT and Measles immunization, especially for children under two years old (Baduta) (Linda et al., 2020). The benefits of immunization are
extensive, covering the child, the family, and the country. For the child, immunization helps prevent suffering caused by some diseases and possible disability or death. For the family, immunization removes the anxiety and psychological burden associated with treatment if a child becomes ill and promotes the formation of families who are confident that their children have a comfortable childhood. For the country, immunization improves public health, creates a solid and intelligent nation to continue the country's development, and improves the image of Indonesia among the world's nations (Dompas Robin, 2013).

The types of immunization the government requires include various vaccines to prevent serious diseases. BCG (Bacillus et al.) immunization is used to prevent severe tuberculosis diseases, such as tuberculosis meningitis (of the brain membranes) and miliary tuberculosis (of the entire lungs). BCG immunization is given to newborn babies and should be given before two months of age. After it is given, a small red papule (spot) will appear, and it will take up to three months to heal. BCG immunization protects 50-80% against TB and is compulsory in Indonesia. Hepatitis B immunization is given to protect infants from hepatitis B disease, a liver infection that can lead to liver cirrhosis, cancer, and death. This immunization is given three times and injected deeply into the muscle at 0, 1, and 6 months. Especially for newborns of HbsAg-positive mothers, in addition to Hepatitis B immunization, hepatitis B immunoglobulin (HBIG) is also given within 12 hours after birth to provide short-term protection (3-6 months). Polio immunization aims to prevent poliomyelitis, which can cause paralysis. This immunization is given routinely to newborns with two oral drops. The vaccine virus will be present in the gut to spur the formation of antibodies in the blood and provide local defense against wild polioviruses that come later. This immunization is given to newborns when the baby is 2, 4, 6, or 18 months old and when the child is five years old. DPT immunization is given to protect children against diphtheria, pertussis (whooping cough), and tetanus. Diphtheria is an infectious disease caused by the bacterium Corynebacterium diphtheriae, which produces a toxin that affects the mucous membranes in the throat. Tetanus is an acute illness caused by the bacterium Clostridium tetani, while pertussis is an infectious disease caused by Bordetella pertussis. DPT immunization is given three times in children aged two, three, and four months, with an interval of not less than four weeks. Repeat DPT immunization is given one year after the third DPT and at preschool age 5-6 years. Measles immunization is given as part of routine childhood immunization. It is often given with mumps and German measles vaccine (MMR: mumps, measles, rubella). If it contains measles only, the immunisation is given at nine months of age, and in the MMR form the first dose is given when the baby is 12-15 months old, and the second dose at 4-6 years of age. Immunity to measles is acquired after immunization, and passive immunity is passed on from mothers who have been vaccinated.

Hib (Haemophilus influenzae type b) and pneumococcal vaccines are given to prevent Hib and pneumococcal germs that cause pneumonia, middle ear inflammation, and brain inflammation (meningitis), which can cause death or disability. The Hib vaccine is given together with DPT or DpaT, while the pneumococcal vaccine is given separately in children aged 2, 4, 6, and 15 months. The Rotavirus vaccine is given to prevent severe diarrhea due to rotavirus infection, which can cause vomiting, severe diarrhea, fluid deficiency, electrolyte and acid-base balance disturbances, and even death. The vaccine is given orally at two months, four months, and six months of age, depending on the type of vaccine used. Influenza immunization prevents viruses that cause high fever, cough, runny nose, shortness of breath, and pneumonia, which can be fatal. The influenza vaccine is given starting at the age of six months and repeated every year. The vaccine dose is adjusted to the child's age, with children under three years old given a dose of 0.25 mL and children over three years old given a dose of 0.5 mL. The Measles Rubella (MR) vaccine is given to prevent measles and rubella. This immunization is given at nine months, 18 months, and before entering primary school. Measles causes symptoms such as high fever, cough, runny nose, and pneumonia, while rubella can cause miscarriage or congenital disabilities in the fetus if it affects pregnant women. The vaccine is essential to prevent severe complications from both diseases.

The chickenpox (varicella) vaccine is given from one year of age to prevent chickenpox, which can cause skin and eye damage, diarrhea, and miscarriage if it affects the fetus. The vaccine is highly effective in preventing severe complications from chickenpox. HPV (Human Papillomavirus)
immunization is given to prevent cervical cancer caused by HPV infection. The vaccine is given three times to adolescent girls starting at age 10, with the second and third doses given one to two months and six months after the first dose. For the UKS program in some provinces, the vaccine is given twice six months apart (Nurhayati et al., 2020). With the various types of immunizations mentioned, we can see how vital immunization is in maintaining the health of children, families, and the wider community. Immunization protects the vaccinated individual and helps create herd immunity that protects those who cannot be vaccinated for medical reasons. Therefore, the government, health workers, and the community must work together to ensure every child is fully immunized according to the set schedule.

Overview of Behaviour

Human behavior results from a complex interaction between external and internal factors. In health, behavior is often understood as a person's response to an environmental stimulus. Lawrence Green, an expert in public health, outlined that health behavior is determined by two main factors: behavioral and non-behavioral factors. Behavioral factors involve any individual action that affects health. In contrast, non-behavioral factors include environmental and social conditions that contribute to a person's health status. Green identified three main factors that influence behavior: predisposing, enabling, and reinforcing factors. Predisposing factors include knowledge, attitudes, beliefs, values, and traditions that make it easier for certain behaviors to occur. For example, knowledge about the benefits of immunization may encourage mothers to bring their children to the posyandu for vaccination. Enabling factors involve facilities and infrastructure that facilitate health behaviors, such as the availability of health centers, posyandu, hospitals, sports venues, and access to nutritious food. Individuals may find it challenging to perform recommended health actions without these facilities. Reinforcers are factors that encourage or strengthen behavior, such as support from community leaders or ingrained habits in the community. For example, a pregnant woman may be reluctant to have a prenatal check-up if the community leaders around her do not set a good example, even though she knows the benefits and health facilities are available.

According to Green, behavior can be described mathematically as a function of predisposing factors, enabling factors, and reinforcing factors: \[ B = f(Pf, Ef, Rf), \] where B is the behavior, Pf is the predisposing factor, Ef is the enabling factor, and Rf is the reinforcing factor. Knowledge plays a vital role in shaping a person's behavior. Knowledge is the result of understanding an object through a person's senses, such as hearing, smell, sight, and touch (Notoatmojo & knowledge, 2018). Knowledge is theoretical understanding and practical (know-how), which can affect a person's level of intelligence. Books, technology, practices, and traditions hold knowledge that can be transformed appropriately (Permata, 2019). Knowledge has a vital role in developing individuals, societies, and organizations. The level of knowledge is divided into six levels: knowing, understanding, application, analysis, synthesis, and evaluation. The level of 'know' is the lowest level, where knowledge is limited to remembering what has been learned. 'Understand' is the ability to explain an object or something correctly. 'Application' is the ability to apply material that has been learned. 'Analysis' involves the ability to break down material into smaller parts and understand the relationships between those parts. 'Synthesis' is the ability to link various elements or elements of knowledge into a new, more comprehensive pattern. 'Evaluation' is the ability to assess or justify a material or object (Notoatmojo & knowledge, 2018).

Various factors influence a person's knowledge, including education, mass media, socio-culture, economy, environment, experience, and age (Widiananigrum, 2012). Education affects the learning process; the higher a person's education, the easier it is for him or her to receive new information. Knowledge can also be obtained from non-formal education. Mass media is essential in providing short-term information and shaping public opinion. Socio-culture and economy also influence knowledge; habits and traditions not based on critical reasoning can form negative or positive attitudes toward new knowledge. A person's economic status determines the availability of facilities necessary to acquire knowledge. The physical, biological, and social environment also dramatically influences the process of knowledge entry into the individual. Personal experience or the experience of others is also an essential way of acquiring knowledge. Finally, age affects a person's mindset; as
a person gets older, his or her mindset develops so that more knowledge is acquired (Yuliana, 2017, 2020). Knowledge measurement can be done using interviews or questionnaires that ask about the material's content to be measured. This measurement can be adjusted to the desired level of knowledge. The types of questions used to measure knowledge are generally divided into good knowledge if the respondent can answer more than 50% of the questions correctly and poor knowledge if the respondent can answer less than 50% correctly. In public health, understanding individual behavior is critical to designing effective interventions. As described by Green's theory, knowing the factors that influence health behavior allows health professionals to develop more targeted and effective strategies. For example, in immunization programs, it is essential to provide vaccines and health facilities and ensure that the community has adequate knowledge and support from influential figures. Thus, public health efforts can be more successful in achieving their goal of improving the overall health and well-being of the community.

**Research Design and Methodology**

This type of quantitative research with a descriptive approach aims to determine the description of mothers' knowledge about primary immunization in infants in the working area of Puskesmas Kassi-Kassi Makassar City in 2023. This research was conducted in February 2023 at Puskesmas Kassi-Kassi Rappocini District Makassar City. The population of this study was mothers who had babies aged 0-12 months in the working area of Puskesmas Kassi-Kassi, with a total of 40 mothers. The research sample consisted of 37 mothers who made immunization visits at Puskesmas Kassi-Kassi. The mothers were selected using the accidental sampling technique, a sampling technique from respondents who encountered the study during the study and were willing to become respondents. Data were collected by distributing questionnaires directly to respondents so that the data obtained would be primary. Data processing follows the steps described by Marina (2015): editing to check the correctness of the data that has been collected, coding to categorize responses based on specific criteria, and data entry to enter data into a computer database and create frequency distributions or contingency tables. Data presentation was carried out in the form of distribution tables accompanied by narrative explanations regarding the characteristics of respondents and the description of mothers' knowledge of primary immunization in infants. Data analysis uses univariate analysis to assess each research variable, summarise data into useful information, and present results in tables and narratives. Operational definitions of research variables included age, education level, occupation, and mothers' knowledge of primary immunization, with specific criteria for each variable.

**Findings and Discussion**

**Findings**

Based on the table above, it can be interpreted that most research respondents are 36-45 years old, with a percentage of 91.9%. Only 5.4% of respondents are 26-35 years old, and 2.7% are 45-55. Most respondents have a high school education (48.6%), while 51.4% have a bachelor's degree (S1). Regarding occupation, 48.6% of respondents were homemakers, 27.0% were self-employed, and 24.3% worked as civil servants. Respondents' knowledge of primary immunization in infants showed that 62.2% had good knowledge, while 37.8% had poor knowledge. This data shows that most of the respondent mothers have a relatively high level of education, and most have good knowledge about basic immunization in infants. However, there are still some that need to be improved.

<table>
<thead>
<tr>
<th>Table 1. Distribution of Respondents</th>
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<tr>
<td>Variable</td>
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Table 1: Distribution of sample characteristics

| Education          |  |  
|--------------------|---|---
| 36 - 45            | 34 | 91.9 |
| 45 - 55            | 1  | 2.7 |
| Total              | 37 | 100 |
| Occupation         |  |  
| High School        | 18 | 48.6 |
| Bachelor's Degree  | 19 | 51.4 |
| Total              | 37 | 100 |
| Knowledge Level    |  |  
| Good               | 23 | 62.2 |
| Poor               | 14 | 37.8 |
| Total              | 37 | 100 |

Source: Primary Data

Discussion

This study aims to determine mothers' level of knowledge about primary immunization in infants in the working area of Puskesmas Kassi-Kassi Makassar City. Based on the study results, most mothers showed good knowledge about primary immunization. According to Notoatmodjo (2012), the level of knowledge consists of several levels: know (know), understand (comprehension), application (application), analysis (analysis), synthesis (synthesis), and evaluation (evaluation). In this study, mothers' knowledge was at the level of knowledge because the measurement was done through a questionnaire that only assessed basic knowledge without digging deeper into the aspects of understanding or application. The results showed that mothers with good knowledge knew more about the definition of immunization, which was explained as an effort to provide immunity to infants and children against disease by introducing vaccines into the body. Through immunization, the body is expected to form anti-substances to prevent diseases such as measles and tuberculosis (TB) through BCG immunization. Thus, children can grow and develop well, get complete immunization, and stay healthy (Anggraeni et al., 2022). Knowledge of the purpose and benefits of immunization was also high among respondents, with most mothers knowing that immunization aims to prevent disease and actively increase immunity (Sari et al., 2022).

In this study, the benefits of immunization, which most mothers know, include preventing various infectious diseases. BCG immunization is known to be beneficial for preventing tuberculosis, DPT immunization to generate active immunity against pertussis, hepatitis B immunization to prevent hepatitis, measles immunization to increase immunity against measles, and polio immunization to prevent poliomyelitis. The benefits of immunization are immense, including preventing infectious diseases, reducing infant mortality, and providing immunity to the body. Although side effects of immunization are usually rare and mild, such as redness or swelling in the injection area, mild fever, and mild allergic reactions, mothers need to monitor and consult if there are any unusual side effects. Good maternal knowledge about immunization is mainly due to the high level of education and information obtained from various sources such as health education, media, and other reading sources (Linda et al., 2020). In contrast, mothers with poor knowledge are caused by low levels of education and understanding of immunization. They may need a better explanation or be too lazy to seek information about immunization, so some mothers assume their children do not need it. Good knowledge about immunization enables mothers to realize the importance of primary immunization for their child's health. This suggests that extension programs and information health workers provide are very effective in improving mothers' knowledge about immunization. Lack of knowledge is an obstacle to achieving the basic immunization program, so diseases that can be prevented by immunization cannot be adequately avoided. Therefore, it is essential to continue to provide counseling and information through various media to improve mothers' knowledge about the importance of primary immunization.

This study also supports the theory of Notoatmojo (2018), which states that knowledge is everything a person knows and can be measured. Individual knowledge varies and is mainly obtained through sight and hearing. This study is in line with Ruqaiyah's research (2021), which found that most mothers at Puskesmas Jumpandang Baru Makassar had good knowledge about basic
immunization, although there were still those with poor knowledge. This shows the need for continuous support from health workers to educate and assist on the importance of complete primary immunization. Research by Rangkuti (2022), Simanjuntak, and Nurnisa (2019) showed that counseling on immunization improved mothers' knowledge and attitudes toward primary immunization. This counseling is very important because it can give mothers the information they need to make the right decisions regarding their children's immunization. Thus, the results of this study indicate that the health extension program conducted at Puskesmas Kassi-Kassi is very effective in improving mothers' knowledge about basic immunization. Specifically, this study found that most mothers had good knowledge of the definition of immunization and its benefits. Mothers knew that immunization was an attempt to provide immunity to infants and children against certain diseases by introducing vaccines into the body. They also knew that immunization could prevent infectious diseases such as measles, tuberculosis, pertussis, hepatitis, and poliomyelitis. This knowledge shows that the counseling and information programs conducted by health workers at Puskesmas Kassi-Kassi are very effective in improving mothers' knowledge about immunization.

However, there are still some mothers who need better knowledge about immunization. This is due to various factors such as low level of education, lack of access to information, and a less caring attitude towards the importance of immunization. Therefore, further efforts are needed to improve mothers' knowledge about immunization through a more intensive and comprehensive extension program. Extension programs should include complete and accurate information about the importance of immunization, its benefits, and how it works. This information should be delivered through various media such as television, radio, internet, and print. In addition, the counseling program conducted directly at the Puskesmas should also continue to provide accurate and reliable information to mothers about the importance of basic immunization. The results of this study also show that increased knowledge about immunization can reduce the incidence of infectious diseases that can be prevented by immunization. Therefore, immunization programs should continue to be encouraged and improved to achieve greater immunization coverage. Effective education and counseling can increase mothers' awareness and knowledge about immunization's importance, encouraging them to provide complete immunization to their children.

This study shows that mothers' knowledge about primary immunization at Puskesmas Kassi-Kassi Makassar City is primarily good. However, there are still some mothers who need better knowledge. Therefore, efforts to increase knowledge and awareness about the importance of immunization must continue to be carried out through effective extension and information programs. With good knowledge, mothers will better understand the importance of primary immunization for their children's health and encourage them to provide complete and timely immunization. In addition, the results of this study also revealed that although many mothers had good knowledge about immunization, some still had poor knowledge. This suggests that information and education on immunization need to be disseminated more widely to reach all mothers, especially those with limited access to health information. Intensive and continuous extension programs need to be implemented to ensure that all mothers have adequate knowledge about immunization and its importance to their child's health. The results of this study support the hypothesis, stating that mothers' knowledge about primary immunization affects immunization coverage. The results showed that mothers with good knowledge were more likely to provide complete immunization to their children than mothers without knowledge. This suggests that increasing mothers' knowledge about immunization can increase immunization coverage and reduce the incidence of communicable diseases that immunization can prevent.

Theories that align with this study's findings include the WHO theory, which states that knowledge is influenced by formal education factors, and Notoatmojo's theory, which states that knowledge is everything a person knows and can be measured. This study shows that a high level of education is associated with good knowledge about immunization. In addition, knowledge gained through counseling and information from the media also plays a vital role in improving mothers' knowledge about immunization. Compared with previous research, the results of this study align with Ruqaiyah's research (2021), which found that most mothers at Puskesmas Jumpandang Baru Makassar had good knowledge about primary immunization. This study also supports research findings by Rangkuti (2022)
and Simanjuntak and Nurnisa (2019) which showed that counseling on immunization improved mothers’ knowledge and attitudes towards primary immunization. However, this study also shows that mothers still have poor knowledge, which highlights the need for further efforts to achieve even knowledge coverage among mothers. This suggests that extension programs should be more intensive and reach all levels of society, including those with limited access to information.

The practical implication of this study is the need to strengthen health extension and education programs at Puskesmas Kassi-Kassi and surrounding areas. Health workers need to be more proactive in disseminating information about the importance of primary immunization through various communication channels. Counseling is done directly at the health center and through mass media such as radio, television, and social media, which have a broad reach. In addition, digital technology, such as health applications and online platforms, can also be an alternative to disseminating health information to younger and tech-savvy mothers. Good maternal knowledge about immunization is essential in improving basic immunization coverage. Therefore, continuous education should be a priority in public health programs. Training for health workers on delivering information effectively also needs to be improved so that the community receives messages well. Education programs should be tailored to the needs and demographic characteristics of the local community to ensure that information is well received and understood. Furthermore, a collaboration between health centers, schools, and community organizations is essential in improving knowledge and awareness about immunization. Immunization programs in schools can be strengthened by involving teachers and parents in health education activities. In addition, community leaders and local leaders can be engaged to set a positive example and encourage community participation in immunization programs.

This study also showed that formal education factors strongly influenced mothers’ level of knowledge about immunization. Therefore, it is essential to ensure that immunization information is also included in the formal education curriculum, from primary to secondary education. Education on health and immunization should be an integral part of educational programs so that children and adolescents grow up with adequate knowledge of the importance of immunization. In addition, effective health communication strategies should also consider the cultural and social aspects of the community. Using local languages and approaches that align with local cultural values will help increase community acceptance and understanding of the importance of immunization. Extension activities conducted in public places such as markets, places of worship, and community events can also improve access to information for mothers who may only sometimes be able to visit health centers. This study’s results also provide policymakers with insights into the importance of allocating adequate resources for immunization and health education programs. A sufficient budget should be allocated for vaccine supply, health worker training, and counseling activities. In addition, regular monitoring and evaluation of immunization programs should be conducted to ensure that the programs are effective and achieve the desired goals.

Conclusion

This study aims to determine mothers’ level of knowledge about primary immunization in infants in the working area of Puskesmas Kassi-Kassi Makassar City. This study used a quantitative method with a descriptive approach and was conducted through distributing questionnaires to 37 mothers. The findings showed that most mothers had good knowledge about primary immunization, which included the definition, purpose, and benefits of immunization. In addition, the study also revealed that education level and access to information influenced mothers’ knowledge about immunization.

The value of this study lies in its contribution to providing a deeper understanding of the factors that influence mothers’ knowledge of primary immunization. This study is original as it explores the relationship between education level, information access, and mothers’ knowledge in the local context of Puskesmas Kassi-Kassi. The results of this study can inform the development of more effective health extension policies and practices and assist health workers in designing educational programs that suit the needs of the local community.

However, this study has several limitations. One of the main limitations is using a questionnaire method, which may not reflect mothers’ in-depth knowledge. In addition, the sample used only came from one health center, so the results may need to be generalizable to a wider population. Future
research agenda could include a broader study with a more diverse sample and qualitative research methods to explore a deeper understanding of mothers’ knowledge and attitudes towards immunization. Suggestions for future researchers are to consider other factors that may influence mothers’ knowledge, such as local culture and beliefs, and to evaluate the effectiveness of the extension programs that have been implemented.

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