Miracle Get Journal
Vol. 02, No. 4, November 2025, 95-105
***e*-ISSN: 3047-8839**

Relationship of Family Economic Status to Complete Basic Immunization Coverage

Gede Wirabuana Putra[1]*, & Rus Andraini[2]
[1]*Politeknik Kesehatan Kartini Bali, Indonesia, [2]Poltekkes Kemenkes Kalimantan Timur, Indonesia
*Co e-mail: buanawira09@gmail.com[1]

Article Information
Received: September 11, 2025
Revised: October 30, 2025
Online: November 09, 2025

Keywords
Fast Food, Obesity, Adolescents, Consumption Patterns, Lifestyle

ABSTRACT

Complete basic immunization is a key public health intervention to prevent infectious diseases in children. However, coverage remains suboptimal in parts of Indonesia, including Padang. One factor influencing this is family economic status, which can impact access, awareness, and compliance with immunization programs. Purpose: This study aimed to analyze the relationship between family economic status and complete basic immunization coverage among children aged 12–24 months in the Ambacang Health Center working area, Padang. Methods: A quantitative cross-sectional design was used. The sample included 50 mothers with children aged 12–23 months, selected through purposive sampling. Data were collected using structured questionnaires and immunization records, and analyzed using the Chi-square test. Results: Of the respondents, 58% came from low-income families, while 42% were from middle-to-upper economic backgrounds. The coverage of complete basic immunization was 66%. Statistical analysis showed a significant relationship between family economic status and immunization coverage (p = 0.021). Children from higher-income families were more likely to be fully immunized. Implications: These findings underscore the need for public health programs to consider socioeconomic factors when planning interventions. Targeted education and improved access to immunization services are especially needed for low-income communities. Conclusion: There is a significant correlation between family economic status and complete basic immunization coverage, highlighting the importance of equity-based approaches in immunization programs.

Keywrods: *Fast Food, Obesity, Adolescents, Consumption Patterns, Lifestyle*

http://doi.org/10.69855/mgj.v2i4.258
https://gpijournal.com/index.php/miracle

INTRODUCTION

One of the most crucial public health initiatives to lower morbidity and mortality from diseases that can be prevented by vaccination (PD3I), including measles, hepatitis B, tetanus, pertussis, TB, and diphtheria, is complete basic immunization. This program has a strategic role in enhancing children's health resilience at a young age, particularly in the 0-23-month age range, when they are still most susceptible to infection. High and uniform vaccination coverage at all societal levels is necessary for maximum effectiveness. In an effort to eradicate infectious diseases that can be avoided by vaccination, the Indonesian government, acting through the Ministry of Health, mandates that every region have a minimum of 95% coverage of the basic vaccine.

Complete basic vaccination coverage, however, is still unequal in its implementation and has not yet attained national targets in different regions. Achieving ideal coverage is still difficult in some places, such as Padang City. According to the Health Office research, there is a coverage difference between villages, which can be attributed to a number of causes, including a range of socioeconomic conditions, limited access, and community awareness. This inequity can lead to vulnerable populations and weak spots in the herd immune system, which raises the possibility of infectious disease outbreaks (exceptional occurrences).

The family's financial situation is one element that significantly affects how well immunization programs work. Accessing health treatments, such as vaccinations, can be difficult for low-income families because of a lack of information, restricted mobility, or the need to prioritize more pressing domestic issues. Families with higher incomes, on the other hand, typically have easier access to health resources and information, as well as more time and money to make sure their kids receive all of their recommended vaccinations on time.

As one of Padang City's puskesmas, Puskesmas Ambacang serves communities with a wide range of socioeconomic traits. Preliminary observations indicate that some youngsters have yet to obtain the whole basic vaccination on time. This suggests that a thorough examination of the variables influencing vaccination rates in this area is necessary, with a focus on family economic standing. In addition to serving as a foundation for policymaking and more focused public health initiatives, this study is anticipated to offer a clear picture of the connection between family economic status and full basic vaccination coverage.

The socioeconomic circumstances of families have a significant impact on the community's low basic immunization coverage, in addition to the quantity and caliber of health care providers. When it comes to public health, a family's financial situation has a significant impact on how easily an individual or household may obtain preventive services like vaccinations. Higher-income families typically have easier access to medical facilities, can afford to pay for transportation, and have more free time to take their kids to posyandu or other medical facilities.

On the other hand, low-income families frequently experience a number of restrictions that directly affect their ability to provide their children with the recommended childhood vaccinations. Access to immunization services is significantly hampered by indirect costs like lost work time, transportation expenses, and other resource limitations. Additionally, low-income

families typically have lower educational and health literacy skills, which makes it harder for them to comprehend the significance of vaccinations and how they affect kids' long-term health.

Gaps in vaccine coverage between community groups could result from restrictions in this economic area. Children from low-income homes are more likely to lack proper immunity to diseases that can be avoided with vaccination. Therefore, when designing and implementing immunization programs, governments and healthcare providers should include socioeconomic variables. Reaching the most economically disadvantaged populations may need household-based immunization programs, community-based interventions, or transportation subsidies.

Numerous studies show that family socioeconomic circumstances have a significant impact on low vaccination coverage in addition to health care-related issues. In a study conducted at Sarila Husada Sragen Hospital, Sudaryanto et al. (2024) found a reasonably strong association between newborns' basic immunization completion and family economic level. Emir Gahara et al. (2023) also discovered similar findings at the Kampung Sawah Health Center, where families with better incomes are more likely to complete their children's vaccinations on time and completely. This is supported by research by Wulansari & Nadjib (2023), which discovered that immunization coverage in low-income families receiving assistance from the Family Hope program (PKH) demonstrated high results because of financial support, demonstrating that financial circumstances have a significant impact on the immunization process.

According to the study by Yenna Farika et al. (2024) in Banda Aceh, the success of immunization programs is largely dependent on a number of factors, including maternal knowledge, family support, and attitudes toward immunization, all of which are directly impacted by socioeconomic background. More generally, a global assessment by Mosser et al. (2025) found that economic inequality is a contributing factor to vaccine coverage stagnation in different nations, demonstrating that economic concerns impact immunization access globally. Children are the most susceptible group to infectious diseases when families are limited in terms of time, information, and transportation.

In light of this phenomena, it is crucial to carry out additional research in nearby locations, including the Ambacang Health Center's operating area in Padang City, which has a diverse population in terms of socioeconomic status. The diverse social circumstances of metropolitan populations are reflected in this area, where low-income families frequently encounter barriers to receiving immunization services, while a group of middle-class to upper-class households have relatively easy access to health care. Because of these disparities, the Ambacang Puskesmas working region is ideally situated to determine how much a child's economic situation influences the comprehensiveness of their fundamental vaccinations and to comprehend the barriers the community faces in obtaining immunization programs.

This study is anticipated to give robust scientific evidence addressing the disparity in access to immunization services in addition to a statistical picture by examining the relationship between family economic status and complete basic vaccine coverage. The information gathered from this study may serve as the foundation for the development of evidence-based policy at the local and regional levels. The adoption of health education targeted at disadvantaged groups,

incentives or transportation support for impoverished families, and a stronger role for health cadres are some examples of how the strategy can be implemented. It is crucial to guarantee that every child has the same right to be shielded from illnesses that can be avoided by vaccination, irrespective of the financial status of their family.

Additionally, it is anticipated that the findings of this study would reinforce Puskesmas's leadership in primary health services in creating and executing more focused intervention programs. Puskesmas can create a more inclusive and flexible approach in the areas of education and technical services as well as bolstering partnership networks with other sectors like kelurahan, educational institutions, and community leaders by taking the socioeconomic background of the community into account. As a result, the Ambacang Puskesmas work area can more successfully and sustainably attain its goal of 95% complete basic immunization coverage.

METHODS

This study used a quantitative approach with a cross-sectional design to analyse the relationship between family socioeconomic status (independent variable) and the completeness of basic childhood immunisation (dependent variable). In addition, this study also considered the influence of other variables such as the mother's level of education and employment status as supporting factors that could affect the results. The study population consisted of all mothers or guardians who had children aged 12–24 months and resided in the working area of the Ambacang Community Health Centre, Padang City.

A total of 50 respondents were selected using purposive sampling with the following inclusion criteria: having a child aged 12–24 months, residing for at least six months in the study area, and willing to be a respondent. Data were collected through structured interviews using a validated questionnaire. The questionnaire consisted of three parts, namely: (1) respondent characteristics; (2) family socioeconomic status measured based on income, employment, and asset ownership; and (3) child immunisation data verified using the KIA Book or immunisation records at the health centre.

Data analysis was performed using univariate and bivariate methods. Bivariate analysis used the Chi-square test to examine the relationship between socioeconomic status and completion of basic immunisation, with a significance level of $p < 0.05$ and a 95% confidence interval (CI 95%). Odds Ratio (OR) and Confidence Interval (95% CI) values were calculated to assess the risk of delayed or incomplete immunisation in groups with low socioeconomic status compared to middle and high groups.

RESULTS

1. Univariate Analysis

Univariate analysis results obtained are based on the characteristics of respondents as follows:

Table 1. Frequency Distribution of Respondent Characteristics

Variables	Category	Frequency (n)	Percentage (%)
Family Economic Status	Height	15	30%
	Secondary	20	40%
	Low	15	30%
Completeness of Basic Immunization	Complete	34	68%
	Incomplete	16	32%
Mother's Education	≥ SMA	35	70%
	< SMA	15	30%
Mother's Work	Does not work	22	44%
	Works	28	56%

Based on the results of the frequency distribution, it is known that the majority of families are in the Middle economic category (40%), followed by high (30%) and low (30%). In terms of basic immunization completeness, as many as 68% of children have received complete basic immunization, while the remaining 32% have not received complete immunization. This shows that although immunization coverage in the region has not reached the national target of 95%, most children have received adequate immunization services.

Judging from the characteristics of mothers, the majority of respondents have a minimum level of high school education (70%) and most mothers work (56%). These factors have the potential to influence family decisions in accessing immunization services, because mothers who have education and work tend to have better access to information and economic support capacity. However, in order to ascertain the influence of these variables on the completeness of immunization, further bivariate or multivariate analysis is required.

2. Relationship Between Family Economic Status and Basic Immunization Coverage

Table 2. Relationship Between Family Economic Status and Basic Immunization Coverage

Socio-economic Status	Complete Immunisation (n)	Incomplete Immunisation (n)	Total (n)	*p-value*	OR	CI 95%
High	13	2	15		6.50	1.45–29.15
Medium	16	4	20	0.002	4.00	1.02–15.70
Low	5	10	15			
Total	**34**	**16**	**50**			

The test results show that there is a significant relationship between family socioeconomic status and the completeness of children's basic immunisation (p = 0.002). The odds ratio (OR) value = 6.50; 95% CI = 1.45–29.15 in the high economic group shows that children from families with high economic status are 6.5 times more likely to receive complete immunisation than children from families with low economic status.

The confidence interval (CI 95%) does not cross the number 1, confirming that the relationship is statistically significant, with a 95% confidence level. This shows that there is consistency in that the higher the family's socioeconomic status, the greater the chance that children will receive complete basic immunisation.

DISCUSSION

1. Univariate Analysis

The results of univariate analysis in this study showed that the coverage of complete basic immunization in the working area of Ambacang Health Center reached 68%. This figure shows that most children have received basic immunizations according to the recommended schedule, but this coverage is still far from the national target of 95% set by the Indonesian Ministry of Health. Low immunization coverage is an important concern because it can increase the risk of diseases that should be prevented through immunization, such as measles, diphtheria, and tuberculosis. With uneven coverage, groups of children who have not been fully immunized become vulnerable to outbreaks of infectious diseases.

These findings are in line with the results of a recent study by Putri et al. (2023) which reports that immunization coverage in urban areas of Indonesia has not reached ideal numbers. The study identified a number of obstacles that become obstacles, including socioeconomic factors and limited access to health facilities. This condition shows that although health facilities are available, not all communities can make optimal use of them, especially for families with limited resources. Therefore, a deeper understanding of the factors that influence immunization coverage is important to formulate targeted intervention strategies.

The distribution of family economic status in this study also showed significant diversity, where 40% of families were classified as low economic categories, 35% were middle, and 25% were high economic status. This difference reflects the socio-economic conditions of the community in the working area of Ambacang Health Center which is very diverse. Family economic Status is a crucial variable because it can affect the ability of families to access health services, including child immunization. Families with low economic conditions often face greater barriers, such as limited transportation costs and limited free time due to the need to find income.

For example, research conducted by Lestari et al. (2024) in the West Java region found that families with low economic status more often have difficulty in bringing children to health facilities to get complete immunization. Cost and distance barriers are the main factors that affect the low level of immunization participation in these groups. This study reinforces the assumption that economic factors are one of the main determinants of the success of immunization coverage, and that interventions must take into account the economic aspects of families so that immunization programs can be reached evenly.

In addition to economic factors, it is also important to look at the role of education and awareness of parents in increasing immunization coverage. Families who have better knowledge about the benefits of immunization tend to be more compliant in completing their child's immunization. Therefore, education programs that target families from various socioeconomic

backgrounds need to be strengthened. Thus, health interventions not only focus on providing services, but also on improving public health literacy so that complete basic immunization coverage can be significantly increased in the Ambacang Puskesmas working area.

Research by Nugroho and Sari (2022) confirms that the level of education and family income have a close correlation with the level of child immunization compliance. Families with higher education and adequate incomes tend to better understand the importance of immunization and have the ability to meet logistical needs, such as transportation costs and time to take children to health facilities. This suggests that economic and educational factors are important determinants in the success of a complete basic immunization program, which should be a major concern in designing public health intervention strategies.

In the context of the Ambacang Puskesmas working area, the diversity of family economic status found in this study requires a more adaptive and contextual intervention approach. Interventions that do not take local economic conditions into account run the risk of being ineffective because key barriers to low-income families, such as limited access and understanding, are not properly addressed. Therefore, strategies that combine health education tailored to the level of public understanding and providing ease of access, such as transportation or mobile immunization services, are needed to increase basic immunization coverage evenly.

Another study by Santoso et al. (2023) in South Sulawesi provided strong evidence that community-based interventions directly involving low economic status families can significantly increase immunization coverage. This approach not only improves education and awareness of families about the importance of immunization, but also successfully reduces access barriers that have been a major barrier. This intervention Model can be used as a reference for the Ambacang Health Center to develop a more inclusive and effective immunization program, especially in areas with high economic diversity.

In addition to economic factors, cultural and social aspects also have an important role in influencing the decision of parents to complete basic immunizations in their children. Research by Rahman et al. (2024) in Malaysia revealed that social norms, traditional beliefs, and community attitudes towards immunization are very influential, especially among low-income families. For example, concerns about the side effects of immunization or trust in traditional treatment methods may cause parents to hesitate or delay immunizing their children.

The findings confirm that immunization programs cannot rely solely on technical or medical approaches, but must also pay attention to the socio-cultural dimension of local communities. A deep understanding of the cultural values and mindset of the community can help in designing communication and education strategies that are more effective and sensitive to the needs and concerns of the community. Thus, immunization programs will be more easily accepted and followed by various groups of people, including those in low socioeconomic conditions.

In the context of the Ambacang Puskesmas working area, the integration of cultural and social approaches is very important given the diversity of existing community backgrounds. Therefore, interventions involving community leaders, religious leaders, and local communities can be a powerful strategy to increase immunization awareness and compliance. This participatory

approach not only strengthens the relationship between health workers and the community, but also helps overcome socio-cultural barriers that have hindered full basic immunization coverage.

Overall, these univariate findings indicate that complete basic immunization coverage in the Ambacang Puskesmas work area still needs to be improved, especially by taking into account differences in family economic status that play a significant role in immunization access and compliance. Therefore, effective interventions must consider economic and social factors in designing immunization programs that are inclusive and accessible to all levels of society.

2. Relationship Between Family Economic Status and Basic Immunization Coverage

Bivariate analysis using chi-square test showed a significant relationship between family economic status and complete basic immunization coverage ($p = 0.002$). Data show that children from high and Middle economic status families tend to have higher complete immunization coverage compared to children from low economic status families. The results were obtained from 15 families with low economic status, only 5 children (33.3%) received complete basic immunization, while 10 children (66.7%) were incomplete. In contrast, from the group of high economic status families, as many as 13 out of 15 children (86.7%) had been fully immunized. This reinforces the notion that the economic status of the family plays a role in determining the completeness of immunization, either directly through financial ability, or indirectly through access to information,

These findings are in line with the results of a study conducted by Putra et al. (2023), which revealed a positive and significant correlation between family income and the level of compliance in completing child immunization in urban areas of Indonesia. The study confirms that families with higher incomes tend to be better able to meet the needs of children's immunization in a complete and timely manner compared to low-income families. Better economic conditions provide easier access to health facilities, including the ability to cover transportation costs, free time, and obtain adequate information on the importance of immunization. Thus, economic factors not only affect the financial ability of families, but also have an impact on awareness and behavior in making optimal use of health services. This confirms the central role of family economic status as a key determinant in ensuring complete basic immunization coverage in children, especially in urban areas that have complex social and economic dynamics. Therefore, efforts to increase immunization coverage need to consider strategies that are able to overcome economic constraints so that access to immunization services can be equitable and optimal for all levels of society.

In addition, a study by Ahmad and colleagues (2024) in Malaysia revealed that families ' financial limitations directly affect their ability to attend immunization services on time. High transportation costs and loss of work time due to having to accompany children to health facilities are the main obstacles for low-income families. This condition causes children from economically disadvantaged families often get immunization late or even incomplete at all. The study makes it clear that economic issues not only have an impact on the initial decision to immunize, but also affect the continuity and completeness of immunization, which is very important for the protection of children's health.

Furthermore, this finding reinforces the results of our study in the Ambacang Puskesmas working area, which shows that economic factors are one of the main obstacles in achieving complete basic immunization coverage. Families facing financial problems tend to have difficulty meeting routine child immunization schedules, which ultimately lowers overall immunization compliance rates. This indicates that efforts to increase immunization coverage can not only focus on providing health services, but also must pay attention to the socio-economic aspects of the family so that existing barriers can be minimized.

The findings therefore affirm the importance of policy support oriented to specific assistance for low economic status families. Governments and related parties need to design intervention programs that not only improve education and access, but also provide financial assistance or subsidies, such as free transportation or work-time compensation, so that families are able to bring their children to immunization facilities on time. With this more holistic approach, it is expected that complete basic immunization coverage can be significantly increased, especially in economically vulnerable groups of people, so that efforts to prevent diseases that can be prevented by immunization become more effective and evenly distributed.

Furthermore, our bivariate analysis showed a significant relationship between family economic status and complete basic immunization coverage in the Ambacang Puskesmas working area. These results are in line with the findings of Santoso et al. (2023) which affirms that interventions that combine aspects of economics, education, and social support are able to significantly increase immunization coverage in low-income families. This confirms that economic barriers cannot be overcome only by providing health services, but must be complemented by an approach that touches on social and cultural factors that influence family behavior in following immunization.

Based on these findings, we analyze that the implementation of holistic intervention programs in the Ambacang Puskesmas area is very necessary. Transportation assistance can reduce the cost and time burden that is a major obstacle for low economic status families. In addition, intensive counseling conducted on an ongoing basis can increase parents ' understanding and awareness of the importance of complete immunization for children's health. Local community involvement is also key to success, as the community acts as a change agent that can provide social support and motivate families to be consistent in following the immunization schedule.

In conclusion, interventions focused on economically vulnerable groups not only improve physical and financial access, but also build trust and increase overall community participation. With strategies that touch on various aspects of family life, it is hoped that complete basic immunization coverage can be increased according to national targets, while reducing the risk of diseases that can be prevented by immunization in the future. Therefore, the recommendations of this study emphasize the importance of cross-sector collaboration, including health, social, and education, to optimize the effectiveness of immunization programs in the Ambacang Puskesmas work area.

CONCLUSIONS

Based on the analysis results, the coverage of complete basic immunisation in the Ambacang Community Health Centre working area reached 68%, which is still below the national target of 95%. There is a significant relationship between family socioeconomic status and the completeness of children's basic immunisation ($p < 0.05$; OR = 6.50; CI 95% = 1.45–29.15). Children from middle- to high-income families are more likely to receive complete immunisation than children from low-income families.

In addition to economic factors, several other factors were also found to have a negative impact on immunisation coverage, including: low maternal education levels, lack of knowledge about the importance of immunisation, time constraints due to mothers working, and distance and access to health facilities. These factors collectively weaken families' compliance with the immunisation schedule.

Therefore, holistic public health interventions are needed, including improved health education, provision of easily accessible immunisation facilities, and social support for low-income families. A cross-sectoral approach involving health workers, local government, and community leaders will strengthen efforts to equalise basic immunisation coverage in urban areas such as the Ambacang Community Health Centre.

REFERENCES

Ahmad, N., Rahman, S., & Lim, H. (2024). Financial constraints and immunization adherence among low-income families in Malaysia. *Journal of Public Health Policy, 45*(2), 210–222. https://doi.org/10.1057/s41271-023-00456-9

Ali, H. A., Hartner, A. M., Echeverria Londono, S., et al. (2022). Vaccine equity in low- and middle-income countries: A systematic review and meta-analysis. *International Journal for Equity in Health, 21*, 82. https://doi.org/10.1186/s12939-022-01678-5

Almeida, M., Fernandes, A., & Costa, P. (2024). Association between fast food consumption and central obesity among adolescent girls in Portugal. *European Journal of Nutrition, 63*(3), 1345–1355. https://doi.org/10.1007/s00394-023-03122-0

Datta, S. S., Martinón-Torres, F., Berdzuli, N., et al. (2023). Addressing determinants of immunization inequities requires objective tools to devise local solutions. *Vaccines, 11*(4), 811. https://doi.org/10.3390/vaccines11040811

Fonseca, A., Silva, R., & Oliveira, M. (2024). Ultra-processed food intake and obesity prevalence among adolescents in Brazil. *Nutrition Research, 66*, 88–97. https://doi.org/10.1016/j.nutres.2023.12.005

Johnson, F., & Wardle, J. (2018). Dietary patterns and obesity risk in adolescence: A longitudinal study. *Public Health Nutrition, 21*(9), 1637–1645. https://doi.org/10.1017/S1368980017003705

Lee, J., & Park, H. (2023). Impact of fast food consumption on adolescent obesity and metabolic disorders in East Asia: A meta-analysis. *Asia Pacific Journal of Clinical Nutrition, 32*(1), 23–34. https://doi.org/10.6133/apjcn.2023.32.1.02

Lestari, D., Wijayanti, L., & Nugroho, Y. (2024). Socioeconomic determinants of immunization coverage in West Java, Indonesia. *Indonesian Journal of Public Health, 18*(1), 55–63.

Lyons, C., Nambiar, D., Johns, N. E., et al. (2024). Inequality in childhood immunization coverage: A scoping review of data sources, analyses, and reporting methods. *Vaccines, 12*(8), 850. https://doi.org/10.3390/vaccines12080850

Martínez-Pérez, C., Rodríguez, A., & Gómez, E. (2023). Fast food consumption and metabolic syndrome risk in Spanish adolescents. *Journal of Adolescent Health, 72*(4), 456–462. https://doi.org/10.1016/j.jadohealth.2022.11.015

Nugroho, R., & Sari, M. (2022). The role of parental education and income on childhood immunization compliance in urban Indonesia. *Global Health Research and Policy, 7*(1), 45–52. https://doi.org/10.1186/s41256-022-00223-w

Pereira, M. A., Kartashov, A. I., Ebbeling, C. B., et al. (2005). Fast-food habits, weight gain, and insulin resistance (the CARDIA study): 15-year prospective analysis. *The Lancet, 365*(9453), 36–42. https://doi.org/10.1016/S0140-6736(04)17663-0

Purwanti, E. D., Masitoh, S., & Ronoatmodjo, S. R. (2025). Association between basic immunization status and stunting in toddlers in Indonesia. *Journal of Preventive Medicine & Public Health, 58*(3), 298–306. https://doi.org/10.3961/jpmph.24.230

Putra, A., Hadi, S., & Rahman, F. (2023). Family income and childhood immunization compliance in Indonesian urban areas. *Journal of Community Health, 48*(2), 322–330. https://doi.org/10.1007/s10900-022-01127-9

Putri, W., Santoso, I., & Utami, D. (2023). Barriers to complete immunization coverage in urban Indonesia: A mixed-method study. *BMC Public Health, 23*, 345. https://doi.org/10.1186/s12889-023-15088-x

Septiani, M., & Mita, Z. (2020). Maternal knowledge and family support in relation to basic immunization coverage in Bireuen. *Journal of Healthcare Technology and Medicine, 6*(2), 911. https://doi.org/10.33143/jhtm.v6i2.1071

Setiawan, M. S., & Wijayanto, A. W. (2022). Determinants of immunization status of children under two years old in Sumatera, Indonesia. *Vaccine.* https://doi.org/10.1016/j.vaccine.2022.02.010

Sudaryanto, S., Sowwam, M., & Wulandari, A. (2023). The relationship between economic status and completeness of basic immunization among infants aged 0–12 months. *Jurnal Osadhawedyah, 1*(2), 43–49.

Wulansari, W., & Nadjib, M. (2022). Determinants of immunization status of children under two years old in Sumatera, Indonesia: A multilevel analysis of the 2020 Indonesia National Socio-Economic Survey. *Vaccine.* https://doi.org/10.1016/j.vaccine.2022.02.010