The Impact of Working Mothers on Children's Nutritional Status and Immunization

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ABSTRACT

Background: Indonesian culture tends to place greater responsibility for childcare on the mother. In this modern era, economic needs are increasing, forcing mothers to work to meet the demands of life. Mothers with dual roles, often known as working mothers, are those who, in addition to household responsibilities, also have responsibilities outside the home. **Aim:** To analyze the impact of working mothers on children's nutritional status and immunization status. **Methods**: This study used a cross-sectional approach with a total sample of 120 mothers whose children were treated at Kuningan Private Hospital, West Java. Data were analyzed using the chi-square test. **Results:** There is a relationship between maternal employment status and child immunization status with a p-value of 0.036 <0.05. There is no relationship between maternal employment status and child nutritional status with a p-value of 0.204 >0.05. **Conclusions:** Housewives pay more attention to the completeness of their children's immunizations than working mothers. A mother's education level influences her knowledge and awareness of the importance of good nutrition for her child. Mothers with higher education tend to have toddlers with better nutritional status due to their greater knowledge of balanced nutrition and proper feeding practices.

Keywords: children; immunization status; nutritional status; working mothers.

INTRODUCTION

The nutritional status of toddlers is an indicator of their health and development, which influences the quality of their future human resources. In Indonesia, toddler nutrition is a serious challenge. The latest data shows that the prevalence of stunting reached 24.4% in 2021, and the rate of malnutrition reached 17.7%. These figures reflect that nearly one-third of toddler's experience stunted growth due to nutritional imbalances, which have long-term impacts on their health, growth, and development (1).

Maternal employment influences children's nutritional status. Working mothers have better access to economic resources, enabling them to purchase more nutritious food and meet their children's nutritional needs. Stable, well-paid employment is associated with better access to health and education services, which contribute to children's overall health. However, demanding work can reduce the time mothers spend caring for and providing attention to their children, which can impact the nutritional status of toddlers (1).

Immunization is a health service aimed at protecting individuals from vaccine-preventable diseases (PD3I) (2). Immunization is one of the most affordable health interventions, actively enhancing a person's immunity against a specific disease, so that if they are exposed to the disease, they will not become ill or experience only mild illness (3). The Ministry of Health has implemented an Immunization Development Program for children to reduce the incidence of PD3I. Routine immunizations are provided to children, including both basic and booster immunizations (4).

The government stipulates that every child under two years of age must receive booster immunizations. If any booster immunization is not received, the child is considered to have incomplete booster immunizations (5). Follow-up immunization is included in the routine immunization program by giving 1 dose each of DPT-HB-Hib and measles rubella (MR) to children aged 18 to 24 months (6).

Indonesian culture tends to place greater responsibility for childcare on the mother. A mother is the primary and first figure a child encounters from birth, and therefore, she holds a key role in the process of nurturing and educating them. In this modern era, economic needs are increasing, forcing mothers to work to meet the demands of life. Mothers with dual roles, often known as working mothers, are those who, in addition to household responsibilities, also have responsibilities outside the home, whether at the office, a foundation, or as entrepreneurs, leaving them with little time for their family. Conversely, non-working mothers are stay-at-home mothers who tend to perform household duties in their daily lives. This means that mothers with dual roles use their time and responsibilities not only for housework and childcare but also for the additional burden of work. The numerous responsibilities that mothers with dual roles must shoulder make them more likely to experience fatigue, leading to concerns that their children will grow up to be weak (7).

Parents should be aware of child nutritional assessments to determine whether a child is malnourished. Indonesia monitors, evaluates, records, and reports nutritional status using national standards, namely the World Health Organization National Centre for Health Statistics (WHO-NCHS) anthropometry (8). Kartiningrum (2019) stated that nutritional problems are a public health problem, but the way to overcome them is not only through medical approaches and health services. Addressing nutritional problems should be carried out through a comprehensive approach involving all parties such as family, community, government, and economic actors. One factor that influences a child's nutritional status is social status (9).

One factor that directly affects a child's nutritional status is infectious disease. The United Nations Children's Fund (UNICEF) states that individuals with inadequate nutritional intake will experience a weakened immune system, making them susceptible to illness (10). Infectious diseases affecting children can disrupt metabolism, leading to hormonal imbalances and impaired immune function. Furthermore, they can also disrupt nutrient absorption, leading to malnutrition if this persists for a long period. The first indirect factor influencing nutritional status is social status. The socioeconomic environment that influences nutritional status includes employment, economic development, and natural disasters. A person with a job earns enough income to meet the food needs of themselves and their families, thus ensuring children have good nutritional status (10). Mothers who work in the morning cannot visit the integrated health post (Posyandu) because they are busy with work. Furthermore, mothers have less time to prepare meals for the family, and children may be left with other families, thus reducing the mother's attention to their children's health. Researchers are interested in examining the impact of working mothers on nutritional status and immunization status due to several data descriptions presented previously.

METHODS

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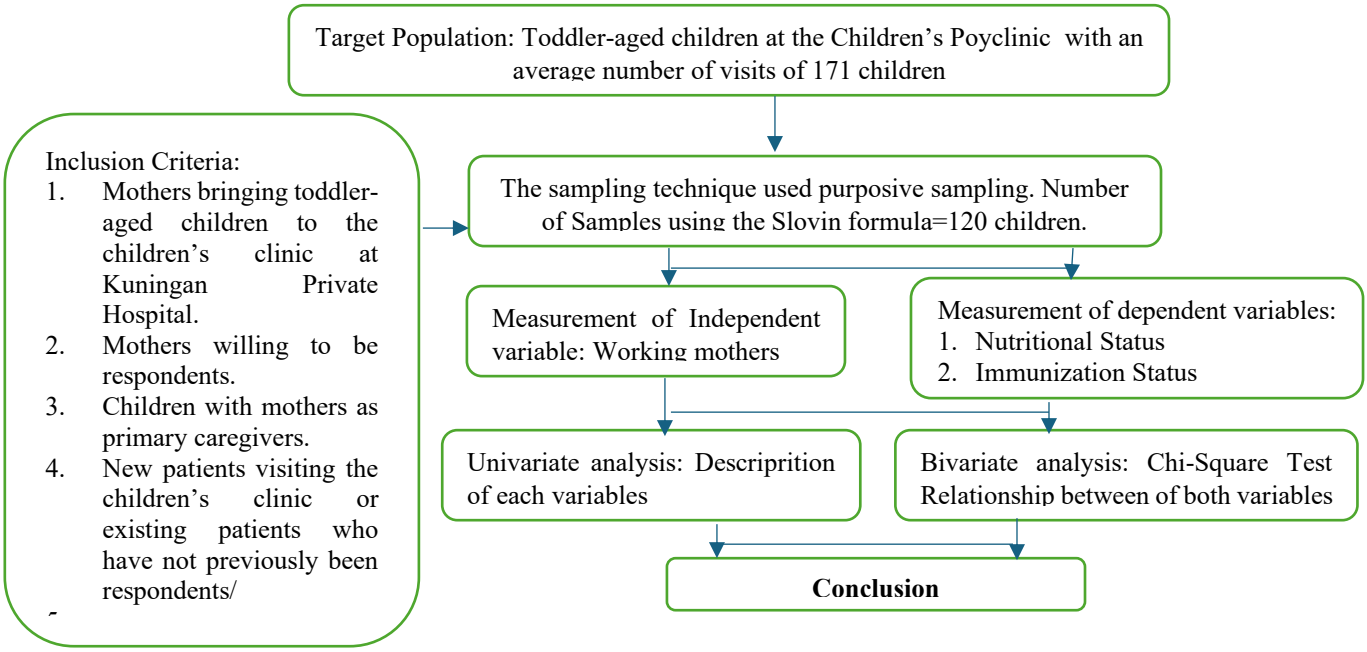
Data collection used observation sheets to determine children's immunization and nutritional status by measuring their weight and height. Immunization status classification used observation sheets to assess whether the children had received their immunizations. Researchers used calibrated digital scales. To measure height, researchers used a stature meter. The results of these measurements were then entered into the observation sheets. Nutritional status classification based on the BW/H Index (Z-score formula) is as follows (11):

1. Malnutrition: <-3 SD
2. Undernutrition: -3.0 SD to <-2.0 SD
3. Normal: -2 SD to +2 SD
4. Over nutrition: >+2 SD
5. Obesity: >+3.

After the research data was obtained, computerized data processing was performed before entering the data analysis stage. Data analysis activities are carried out after data from all respondents or other data sources have been collected. The data analysis techniques used by the researchers were univariate and bivariate analysis. Univariate analysis aims to explain or describe the characteristics of each variable. Bivariate analysis in this study used the Chi-Square Test. The Chi-Square Test was used to determine the relationship between working mothers and the nutritional status of toddlers and the relationship between working mothers and the immunization status of toddlers.

Figure 1. Research Stages Flowchart



RESULTS

Table 1. Characteristics of Respondents (n=120)

Characteristics	N	(%)
Mother's Education		
Elementary School	13	10.8
Junior High School	16	13.3
Senior High School	54	45.0
Diploma Three	21	17.5
Bachelor's Degree	16	13.3
Mother's Employment Status,		
Housewife	83	69.2
Working Mother	37	30.8
Immunization Completeness		
Complete	105	87.5
Incomplete	15	12.5
Child's Nutritional Status		
Normal	104	86.7
Undernutrition	13	10.8
Over nutrition	3	2.5
Amount	**120**	**100**

Table 1 shows that most mothers had a high school education 75.83% (91 mother); the majority of mothers worked as housewives 69.2% (83 children), the highest nutritional status of children was normal 86.7% (104 children), and the highest immunization status was complete 87.5% (105 children).

Table 2. Relationship Between Maternal Employment Status and Child Nutritional Status

Maternal Employment Status	Child's Nutritional Status						p value
	Normal		Undernutrition		Over Nutrition		
	N	%	N	%	N	%	
Housewife	69	57.5	11	9.13	3	2.5	0,204
Working Mother	35	29.17	2	1.7	0	-	
Amount	104	86.67	13	10.83	3	2.5	120 (100%)

Table 2 shows that 69 (57.5%) were housewives with children of normal weight, while 11 (9.13%) had underweight children, and 3 (2.5%) had overweight children. Working mothers have children with normal weight, 35 mothers (29.17%) and working mothers have children with low weight, 2 mothers (1.7%). The chi-square test results showed a p value of 0.204, which is greater than 0.05, meaning there is no relationship between the mother's employment status and the child's weight status.

Table 3. Relationship Between Maternal Employment Status and Child Immunization Status

Maternal Employment Status	Child Immunization Status				p value
	Complete		Incomplete		
	N	%	N	%	
Housewife	69	57.5	14	11.67	0.036
Working Mother	36	30	1	0.83	
Amount	105	87.5	15	12.5	120 (100%)

Table 3 shows that 69 (57.5%) were housewives with children with complete immunization status; 36 (30%) were working mothers with children with complete immunization status; 14 (11.67%) were housewives with children with incomplete immunization status, and 1 (0.83%) was working mother with children with incomplete immunization status. The chi-square test showed a p-value of 0.036 <0.05, indicating a relationship between maternal employment status and children's immunization status.

DISCUSSION

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The results of the study, as shown in Table 1, show that 105 children received complete basic immunizations, while 15 children did not. This study found that no mothers had completely omitted immunizations for their children. Reasons for not providing basic immunizations to children included: the child was sick at the time of the scheduled immunization, causing the mother to miss it and then forget to administer it; previous experiences of children who had not received immunizations had not experienced illness, leading to other children not being immunized; and mothers' reluctance to take their children to the community health centre for immunization during the COVID-19 outbreak (14).

Each country has a different immunization program (24). Immunization programs have been implemented in Indonesia since 1956. The Ministry of Health launched the Immunization Development Program (PPI) for children to reduce the incidence of PD3I. Routine immunizations are provided to children, both basic and advanced immunizations. For advanced immunizations, toddlers aged 18 to 24 months are given immunizations (DPT-HB-Hib and Measles/MR) (26).

Table 1 shows that the majority of mothers in this study had a higher education level (91 mothers, or 75.83%). Higher education can also improve mothers' ability to absorb information about nutrition and health and apply it to appropriate feeding practices for their children. Mothers with lower education often have limited access to information and knowledge about good nutrition, increasing the risk of malnutrition in their children (2). Mothers' education level influences their knowledge and awareness of the importance of good nutrition for their children (2).

This study disagrees with research conducted by Indriyani et al. (2020) in Yogyakarta City, which found that maternal education level is associated with the nutritional status of toddlers, where mothers with higher education tended to have toddlers with better nutritional status. This also contradicts research conducted by Wawan et al. (2019) in Bogor Regency, which showed that mothers with higher education had better knowledge about balanced nutrition and proper feeding practices. It should be noted that other factors can influence toddler nutritional status, such as diet, access to health services, and the residential environment. Malnutrition can be caused by various factors, including children's diet, infectious diseases, family food security, parenting patterns, health services, and the health environment (20).

This discrepancy may occur for several reasons. For example, this study did not measure other variables that may also influence toddler nutritional status, such as food intake, history of infectious diseases, and maternal feeding practices. Therefore, research that includes these variables is needed to obtain a more comprehensive picture. Furthermore, this study used a cross-sectional design, so it cannot demonstrate a definitive cause-and-effect relationship. Therefore, longitudinal or cohort studies are needed to confirm this causal relationship. This study was conducted in only one region, so the results may not be generalizable to other regions with different social, economic, and cultural characteristics. Similar research in other regions with different characteristics can be conducted to strengthen the findings of this study (2).

The results of this study align with research conducted by Pujiasih (2017) on the relationship between maternal employment status and the accuracy of booster immunizations for children aged 18-24 months at the Paliyan Community Health Center, which showed a significant relationship, with a Chi-square statistical test yielding a p-value of 0.000 (25). The researcher's analysis of the relationship between maternal education and incomplete child immunization status revealed that 5 of the 13 respondents (38%) had elementary school education. Regarding occupation and incomplete immunization status, 14 of the 83 respondents (16%) were housewives. This finding aligns with Rizqa's research, which states that factors influencing immunization completeness include maternal education level and busy schedule (12).

This research aligns with research conducted by Pusung et al. (2018) on the relationship between immunization history and infectious disease prevalence with nutritional status in toddlers aged 24-59 months. The study stated that 99% of toddlers were fully immunized, while 1% were incomplete. This indicates that almost all toddlers at the community health center had received all their vaccinations (13).

Research conducted by Nina (2023) on Factors Influencing Basic Immunization Completeness states that tradition and family support are the most influential factors influencing incomplete basic immunization in infants and toddlers. Factors that had less significant impacts on immunization completeness were respondent age, income level, education level, employment status, knowledge and beliefs about immunization, as well as the presence of health workers, immunization locations, and staff attitudes (14).

According to the researchers, the high rate of child immunization coverage is due to the fact that most areas in Kuningan Regency are not remote, resulting in wide-ranging health services and access, resulting in high immunization coverage. The increasing amount of information and programs from the government regarding immunization through community health centers or integrated health posts (posyandu) has had an influence so that the community can consider for themselves the disadvantages and advantages of immunization and can take steps to provide immunization or not to provide immunization to their children. The research results in Table 1 show that of the 120 respondents, the majority (86.7%) of children had normal nutritional status based on weight/height (BW/H), 13 respondents (10.8%) were undernourished, and 3 respondents (2.5%) were over nourished.

According to Harjatmo et al. (2017), nutritional status is a condition that occurs due to the balance between nutritional intake and the body's nutritional needs. Each individual requires different nutritional intakes depending on age, gender, activity level, and so on. Routine assessment of the nutritional status of toddlers is important. Routine nutritional status assessments can detect nutritional health problems in children early (10).

These results are supported by research conducted by Zona et al. (2021) on the Relationship Between Mothers' Knowledge of Complementary Foods and the Nutritional Status of Infants Aged 6-24 Months. In a univariate analysis, the study found that the nutritional status of most children was good, with 68 out of 90 children (76%). Twenty-two children (24%) were undernourished (15).

According to researchers, there are still many nutritional statuses in the normal category based on the anthropometric index (BB/TB) in this study, apart from indirect factors, it is also influenced by direct factors, namely food intake. Providing adequate complementary feeding will have a positive impact on children's nutritional status, but indirect factors can also affect nutritional status in toddlers, such as a good level of maternal knowledge that can influence the implementation of providing complementary feeding. Kartiningrum, (2019) in her research said that indirect factors that affect nutritional status include economic status, knowledge, completeness of immunizations, infectious diseases, breast milk and Early Breastfeeding Initiation. Ways to overcome the problem of abnormal nutritional status apart from food intake can be done by mothers regularly taking their children to Posyandu so that the child's growth and development can be seen and monitored, so that if something is wrong with the child's growth early, it will be handled quickly (9 & 20). Immunization is an active effort to increase a person's immunity to a disease so that if they are exposed to that disease, they will not get sick or only experience mild illness. Immunization provides immunity to a specific disease. A child is immune or resistant to one disease, but not necessarily to other diseases (16).

According to the Regulation of the Minister of Health of the Republic of Indonesia Number 12 of 2017, immunization can only provide immunity against a specific disease; therefore, to prevent other diseases, additional immunizations are necessary. These results align with research conducted by Hayyudini et al. (2017) which discussed the relationship between maternal characteristics, parenting patterns, and basic immunization administration on the nutritional status of children aged 12-24 months, which stated that there was no significant relationship between basic immunization status and children's nutritional status (17). In his research, Hayyudini said that these factors are also closely related to increasing the body's resistance, so even though they have received complete basic immunizations, if there are

factors that are not given optimally, it will disrupt the toddler's immunity and resistance, so that the toddler is susceptible to disease and can then affect the toddler's nutritional status (17).

One factor thought to influence the nutritional status of toddlers is the family's socioeconomic conditions, including the mother's occupation and education. One factor thought to influence the nutritional status of toddlers is the family's socioeconomic conditions, including the mother's occupation and education. Mothers play a crucial role in maintaining the nutritional status of toddlers. Working mothers tend to have more limited time to care for and prepare nutritious food for their children. Research conducted by Kustriyanti et al. (2020) in Semarang Regency showed that working mothers have a higher risk of toddlers with poor nutritional status than non-working mothers. However, on the other hand, maternal employment can also increase family income, which can be used to meet children's nutritional needs. Research conducted by Fitri et al (2020) in Padang City showed that mothers who work and have sufficient income tend to have children with better nutritional status (19).

Higher education can also improve mothers' ability to absorb information about nutrition and health and apply it to appropriate feeding practices for their children. Mothers with less education often have limited access to information and knowledge about good nutrition, increasing the risk of malnutrition in their children.

CONCLUSION

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The conclusion from this study is that there is a relationship between a mother's working status and a child's immunization status, and there is no relationship between a mother's working status and a child's nutritional status.

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Conflicts of Interest: The author(s) declared no potential conflicts of interest concerning this article's research authorship and/or publication.

Availability of Data and Materials

All data generated or analysed during this study are included in this published article.

Ethical Approval

This research has been declared ethically sound based on ethics letter number 076/USTB/Etik/Has./VIII/2023 from Santo Borromeus University.

REFERENCES

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2. Ronals, Pricilya MW, Ronny BR. Hubungan Pekerjaan dan Pendidikan Ibu Dengan Status Gizi Balita di Puskesmas Samkai Kabupaten Merauke. Jurnal Cakrawala Ilmiah. 2024;3(9): 2647-2656.
3. Ntenda, P.A.M. et al. (2019) 'Factors associated with completion of childhood immunization in Malawi: A multilevel analysis of the 2015-16 Malawi demographic and health survey', Transactions of the Royal Society of Tropical Medicine and Hygiene, 113(9), pp. 534–544. doi:10.1093/trstmh/trz029.
4. Riskesdas (2018) 'Berikan Anak Imunisasi Lengkap', Pemerintah Provinsi Lampung Dinkes [Preprint]. Available at: https://dinkes.pringsewukab.go.id/.
5. Kemenkes (2020) Profil Kesehatan Indonesia Tahun 2019. Jakarta: Kementerian Kesehatan Republik Indonesia. Available at: https://pusdatin.kemkes.go.id.
6. Kemenkes (2021) Profil Kesehatan Indonesia Tahun 2021. Jakarta: Kementerian Kesehatan Republik Indonesia. Available at: https://pusdatin.kemkes.go.id.
7. https://keslan.kemkes.go.id/view_artikel/2947/pengaruh-parenting-stres-ibu-bekerja-pada-kesehatan-mental-anak.
8. Peraturan Menteri Kesehatan Republik Indonesia No. 2 Tahun 2020 tentang Standar Antropometri Anak.
9. Kartiningrum, E. D. (2019). Faktor Risiko Kejadian Gizi Kurang Pada Balita Di Desa Gayaman Kecamatan Mojoanyar Mojokerto. Hospital Majapahit (Jurnal Ilmiah Kesehatan Politeknik Kesehatan Majapahit Mojokerto), 7(2), 67–80. https://doi.org/10.55316/hm.v7i2.112
10. Harjatmo, T. P., Par'i, H. M., & Wiyono, S. (2017). Penilaian Status Gizi. Kementrian Kesehatan Republik Indonesia.
11. Peraturan Menteri Kesehatan Republik Indonesia no 2 Tahun 2020 tentang Standar Antropometri Anak.
12. Rizqa F, P., Widardo, & Martini. (2016). Hubungan Status Imunisasi dengan Status Gizi Balita Usia 12-23 The Association between Immunization and Nutritional Status of children aged 12-23 Months in Punggawan Village Banjarsari Districts Surakarta. *Nexus Kedokteran Komunitas*, *5*(1), 23–34.
13. Pusung, B. L., Malonda, N. S. H., & Momongan, N. (2018). Hubungan antara Riwayat Imunisasi dan Penyakit Infeksi dengan Status Gizi pada Balita Usia 24-59 Bulan di Wilayah Kerja Puskesmas Touluaan Kabupaten Minahasa Tenggara. *Jurnal KESMAS*, *7*(4), 1–7.
14. Nina H, Anggunan, T. Astri P, Muhamad N. (2023). Hubungan Status Pekerjaan Ibu Terhadap Kelengkapan Imunisasi Lanjutan Anak Usia 18-24 Bulan di Wilayah Kerja Puskesmas Rajabasa Indah. Jurnal Ilmu Kedokteran dan Kesehatan. 10 (6); 2135-2141. http://ejurnalmalahayati.ac.id/index.php/kesehatan.
15. Zona, P., Mulyani, S., & Raudhoh, S. (2021). Hubungan Pengetahuan Ibu Tentang MP-ASI dengan Status Gizi pada Bayi Umur 6-24 Bulan. *Jurnal Ilmiah Ners Indonesia*, *2*(1), 33–40. https://doi.org/10.22437/jini.v2i1.15398

16. Susiloningrum, W. R. (2017). Hubungan Pengetahuan Ibu dan Status Imunisasi dengan Status Gizi Balita 2-3 Tahun. *Ilmu Kesehatan Universitas Muhammadiyah Surakarta*, *1*, 1–8.
17. Hayyudini, D., Suyatno, & Yudhy Dharmawan. (2017). Hubungan Karakteristik Ibu, Pola Asuh Dan Pemberian Imunisasi Dasar Terhadap Status Gizi Anak Usia 12-24 Bulan (Studi Di Wilayah Kerja Puskesmas Kedungmundu Kota Semarang Tahun 2017). *Jurnal Kesehatan Masyarakat (Undip)*, *5*(4), 788–800. http://ejournal3.undip.ac.id/index.php/jkm%0Ahttps://ejournal3.undip.ac.id/index.php/jkm/article/view/18779
18. Kustriyanti, D., Hastuti, W., Wulaningsih, I., Rahayu, H., & Boerdiarsih. (2020). Stimulasi Tumbuuh Kembang Anak Usia Toodler Di Dusun Soka Desa Lerep Ungaran Barat. *Angewandte Chemie International Edition, 6(11), 951–952.*, 213.
19. Fitri, S., A.I. Susanti, and A.J. Hadi. "Hubungan Status Pekerjaan Dan Pendapatan Ibu Dengan Status Gizi Balita Di Kota Padang." *Media Gizi Indonesia* 15, no. 1 (2020): 63–69.
20. Fitriyani B. (2024). Hubungan Pekerjaan Ibu Dengan Status Gizi Balita Studi Kasus di Desa Sukajadi. Public Health and Safety International Journal, 4 (1).
21. Fitriani, D. *et al.* (2021) 'Faktor-Faktor yang Berhubungan dengan Pemberian Imunisasi Lanjutan Campak Rubella Pada Balita Usia 18 Bulan Sampai 2 Tahun', *Ahmar Metastasis*, 1(2), pp. 43–48. doi:https://doi.org/10.53770/amhj.v1i1.1.
22. Indriyani, R., B. Murti, and E.P. Pamungkasari. "Determinants of Stunting among Children Aged 6-59 Months in Yogyakarta, Indonesia." *Determinants of Stunting among Children Aged 6-59 Months in Yogyakarta, Indonesia* 5, no. 3 (2020): 204–12.
23. Wawan, A., T. Nuraeni, and B. Murti. "Determinants of Balanced Nutrition Knowledge among Mothers of Children Under Five Years Old in Bogor District, Indonesia." *Journal of Epidemiology and Public Health* 4, no. 3 (2019): 181–90.
24. Barus, K.P.R. (2018) *Hubungan Tingkat Pengetahuan Ibu Terhadap Status Imunisasi Dasar Bayi Di Puskesmas Pancur Batu*, *Karya ilmiah (skripsi)*. Universitas Sumatera Utara. Available at: https://repositori.usu.ac.id.
25. Pujiasih, K. (2017) 'Hubungan Status Pekerjaan Ibu Dengan Ketepatan Waktu Pemberian Imunisasi Pentavalen dan Campak Lanjutan Pada Batita Di Puskesmas Paliyan'. Available at: http://digilib.unisayogya.ac.id.
26. Riskesdas (2018) 'Berikan Anak Imunisasi Lengkap', *Pemerintah Provinsi Lampung Dinkes* [Preprint]. Available at: https://dinkes.pringsewukab.go.id/.