Journal of Islamic Nursing, 2023, 8(1), 22-29
DOI : https://doi.org/10.24252/join.v8i.36471
Received June 2023, Revised August 2023, Accepted August 2023, Published August 2023

pISSN 2528-2549; eISSN 2549-5127

CORRELATION OF SEVERAL FACTORS WITH STUNTING INCIDENCE IN CHILDREN UNDER FIVE

Syabna Hadni Nurzahwa [1] Retno Mardhiati [1] Cornelis Novianus [1]
Faculty of Health Sciences, Universitas Muhammadiyah Prof. Dr. Hamka 12130, Jakarta , Indonesia
*Email: retno_ma@uhamka.ac.id

Abstract

Stunting is a problem in nutritional status that causes growth disturbances so that toddlers are shorter in age. This study aims to determine correlation of several factors with events stunting in toddlers at the Kalibaru Health Center in Bekasi in 2022. This research is a quantitative research study with a design approach to case-control. The population in this study were toddlers stunting and not-stunting aged 12-59 months at the Kalibaru Health Center in Bekasi. The number of samples was 96 under five which were determined using a simple random sampling technique. This study uses primary data and secondary data. Data analysis used in this study was univariate analysis and bivariate analysis using the Chi-Square test. The results of the univariate analysis were 19 (19.8%) low birth weight, 24 (25%) history of diarrheal disease, 14 (14.6%) history of acute respiratory infection, 42 (44.8%) breastfeeding were not exclusive, 18 (18.8%) were born prematurely and 33 (34.4%) were not given colostrum. The results of the bivariate analysis showed that there was a correlation between the incidence of stunting and birth weight, history of diarrheal disease, exclusive breastfeeding, and premature birth (p-value < 0,05). Researchers advise the health center to provide more information about stunting prevention.

Keywords: *Factors, Incidence Stunting, Toddler*

Introduction

The progress and level of development in a country depend on the quality of the country's human resources (HR). One of the criteria for assessing the quality of good human resources is their level of health. The level of health is a reflection of the health of individuals, groups, and communities which can be seen in life expectancy, mortality, disease and community nutritional status, social problems, and mental health. The level of health in children is still a state problem that must be an important priority issue because creating quality human resources in the future is very much determined by the level of health. Parents certainly want healthy children, therefore the growth and development of children should be cared for and supervised by parents (Pratiwi *et al*., 2016).

The toddler years are a very important age for a child's physical growth. At that time, the child's life was very important and certainly required special attention. The age of children under five years is a very crucial age for toddlers in the process of physical and intelligence growth. Of course, this must be supported by good nutrition. The growth of toddlers is so fast that it requires nutritional intake from food that is adjusted to their needs. If the needs of toddlers are not met by adequate nutritional intake, it can lead to malnutrition. Toddlers who experience this can be at risk of experiencing an incident *stunting* (Qolbi *et al*., 2020).

Stunting is a linear growth disorder that lasts from pregnancy to 2 years of age, showing the cumulative and long-term effects of poor nutrition, health, and parenting (Putri, 2020). The Ministry of Health said *stunting* is a child under five with a z score below -2SD or *stunted* and under -3SD or *severely stunted* (Ministry of Health, 2017). In 2017, the number of children under five in the world affected by *stunting* was as much as 22.2% or an estimated 150.8 million. In 2017, the number of *stunting* in the world originating from Asia amounted to 55%, and those originating from Africa as much as 39%. Of the 83.6 million toddlers who experience *stunting* in Asia, South Asia has the highest percentage (58.7%) and the lowest from Central Asia (0.9%).

Prevalence data *stunting* from WHO in 2018 showed that Indonesia was ranked third with the highest percentage with an average of 36.4% (Ministry of Health, 2018). Based on 2018 data from Basic Health Research, in Indonesia the incidence prevalence rate of *stunting* is 30.8% which is categorized as a very short nutritional status of 11.5% and 19.3% for short. In 2019, the prevalence rate of *stunting* in the city of Bekasi was a total of 10.6%. Based on these figures it can be proven that the high number of events *stunting* in West Java, even in Indonesia is still donated by the City of Bekasi (Mugianti *et al*., 2018).

According to the Ministry of Health (2018), malnutrition occurs in a long period from the time the fetus is in the womb to the baby is born which is referred to as the first 1000 days after birth. This is caused by poor access to nutrient-rich foods, low amounts of vitamins and minerals, and a lack of diversity in animal protein and food sources. Children who have low body weight at birth can result in disruption to their body growth. If this condition continues accompanied by improper feeding, children will often get infectious diseases, and poor healthcare factors can also be the cause of children experiencing *stunting*. Toddlers with prolonged protein deficiency even though they have sufficient energy will be stunted and delayed in their growth in height. Indirect factors can influence events *stunting* including not receiving exclusive breastfeeding, incomplete status of immunization, as well as family characteristics including the type of parental profession, parental education level, and family economic situation (Mugianti *et al*. 2018).

The results of Handayani *et al*. (2019) research stated that there is a significant correlation between exclusive breastfeeding and breastfeeding *stunting* in toddlers aged 24-36 months. Based on Nasution *et al*. (2014) showed that low baby weight at birth is related to the presence of *stunting* experienced by children aged 6-24 months. Fitri's research (2018) also states that children born with low weight have a significant link to the occurrence of *stunting*. Based on the phenomena and various related studies that have been described above and also the researchers have not found any research results on *stunting* in toddlers at Kalibaru Health Center Bekasi. This study aims to determine the correlation of several factors with events *stunting* in toddlers. The several factors in question are factors that can influence the incident *stunting* in infants, including birth weight, history of infectious diseases, exclusive breastfeeding, colostrum administration, and premature birth.

Methods

This research is analytical research with a case-control design approach, which aims to determine the correlation of at least two variables by not intervening. The population in this study were toddlers aged 12-59 months in the Kalibaru Health Center Bekasi area. Sampling using simple random sampling and a sample size of 96 respondents. The sample inclusion criteria were toddlers aged 12-59 months who were declared stunted and not stunted and lived in the Kalibaru Health Center, Bekasi.

Data regarding stunting toddlers were obtained through secondary data while data on birth weight, history of infectious diseases, exclusive breastfeeding, colostrum administration, and premature birth were obtained through a questionnaire instrument. The results of the validity test showed that the value of r questions was above the value of r table (r = 0.361) so the questions were considered valid. The results of the reliability test showed that Cronbach's alpha value (0.742) was above the value of 0.6 so it was considered reliable.

Before data collection was carried out, the respondents had been explained directly about their intent and consent to participate in the research. As for also having passed the ethical review process with number: 03/22.02/01523 by the Medical and Health Research Ethics Commission of Muhammadiyah University Prof. Dr. Hamka. Data analysis was carried out univariately to explain the characteristics of each variable to be studied, then bivariate analysis was carried out with the chi-square test to determine the correlation between birth weight, history of infectious diseases, exclusive breastfeeding, colostrum giving, and premature birth with incidence stunting.

Results

This research was conducted in May-June 2022 in the working area of the Kalibaru Health Center in Bekasi with a total sample of 96 respondents. Univariate results show that the number of children under five *stunting* as many as 48 (50%) and toddlers do not *stunting* as many as 48 (50%) (Table 1). Infants with a birth weight ≥ 2500 grams are more (80.2%) compared to infants with a birth weight < 2500 grams (19.8%) (Table 2). Toddlers who do not have a history of diarrhea are more (75%) than toddlers who have a history of diarrhea (25%) (Table 3). There are more toddlers with no history of STIs (85.4%) than toddlers who have a history of STIs (14.6%) (Table 4). There are more toddlers with exclusive breastfeeding (83.3%) compared to toddlers who are not exclusively breastfed (16.7%) (Table 5). Toddlers who were given more colostrum (65.6%) compared to toddlers who were not given colostrum (34.4%) (Table 6). More toddlers were not born prematurely (81.3%) than toddlers who were born prematurely (18.8%) (Table 7).

Table 1. Distribution Frequency of *Stunting* (N=96)

Stunting	F	P (%)
Yes	48	50
No	48	50
Total	96	100

Table 2. Distribution Frequency of Low Birth Weight (N=96)

Low Birth Weight	F	P (%)
< 2500 gram	19	19,8
≥ 2500 gram	77	80,2
Total	96	100

Table 3. Distribution Frequency of History Diarrhea (N=96)

History Diarrhea	F	P (%)
Yes	24	25
No	72	75
Total	96	100

Table 4. Distribution Frequency of Acute Respiratory Infections (N=96)

Acute Respiratory Infections	F	P (%)
Yes	14	14,6
No	82	85,4
Total	96	100

Table 5. Distribution Frequency of Exclusive Breastfeeding (N=96)

Exclusive Breastfeeding	F	P (%)
Nonexclusive	14	14,6
Exclusive	82	85,4
Total	96	100

Table 6. Distribution Frequency of Colostrum Administration (N=96)

Colostrum Administration	F	P (%)
No colostrum	14	14,6
With colostrum	82	85,4
Total	96	100

Table 7. Distribution Frequency of Premature Birth (N=96)

Premature Birth	F	P (%)
Yes	14	14,6
No	82	85,4
Total	96	100

Bivariate results through statistical tests obtained a score of p <0.05 indicating that there is a significant correlation between birth weight and birth weight *stunting*. OR value = 3.541 (95% CI; 1.160-10.808) indicates a toddler who weighs. Low birth weight has a 3.541 times higher risk of being affected by *stunting* than toddlers with normal birth weight (Table 8). The results of statistical tests obtained a p score <0.05 indicating that there is a significant correlation between the history of diarrheal disease and the presence of *stunting*. OR value = 3.212 (95% CI; 1.186 – 8.698) indicates that toddlers with a history of diarrhea have a 3.212 times higher risk of developing *stunting* than toddlers with no history of diarrhea (Table 9). The results of statistical tests obtained a p-score≥ 0.05 indicating that there is no significant correlation between the history of ARI and the presence of *stunting*. OR = 2.895 (95% CI; 0.839 – 9.984) indicates that toddlers with a history of ARI have a 2.895 times higher risk of developing *stunting* than toddlers with no history of ARI (Table 10). The results of statistical tests obtained a p-score <0.05 indicating that there is a significant correlation between non-exclusive breastfeeding and the presence of *stunting*. OR value = 5.571 (95% CI; 1.472-21.083) indicates that toddlers with non-exclusive breastfeeding are at risk of 5.571 times greater *stunting* than toddlers with exclusive breastfeeding (Table 11). The statistical test results obtained a p-score≥ 0.05 indicating that there was no significant correlation between non-exclusive breastfeeding and *stunting*. OR value = 1.923 (95% CI; 0.816 – 4.531) indicates that infants who are not given colostrum have a 1.923 times higher risk of developing *stunting* than toddlers who were given colostrum (Table 12). The results of statistical tests obtained a p score <0.05 indicating that there is a significant correlation between preterm birth and the presence of *stunting*. OR value = 4.529 (95% CI; 1.367-15.007) indicates that toddlers born prematurely are at risk of 4.529 times greater *stunting* than toddlers who were not born prematurely (Table 13).

Table 8. The Correlation of Birth Weight with *Stunting*

Birth Weight	*Stunting*				P-*value*	OR	CI
	Yes		No				
	n	%	n	%			
Low	14	29,2	5	10,4	0,040	3,541	1,160–10,808
Normal	34	70,8	43	89,6			

Table 9. The Correlation of History Diarrhea with *Stunting*

History Diarrhea	*Stunting*				P-*value*	OR	CI
	Yes		No				
	n	%	n	%			
Yes	17	35,4	7	14,6	0,034	3,212	1,186– 8,698
No	31	64,6	41	85,4			

Table 10. The Correlation of Acute Respiratory Infections with *Stunting*

Acute Respiratory Infections	*Stunting*				P *value*	OR	CI
	Yes		No				
	N	%	n	%			
Yes	10	20,8	4	8,3	0,148	2,895	0,839– 9,984

No	38	79,2	44	91,7			

Table 11. The Correlation of Exclusive Breastfeeding with *Stunting*

Exclusive Breastfeeding	*Stunting*				P *value*	OR	CI
	Yes		No				
	n	%	n	%			
Nonexclusive	13	27,1	3	6,3	0,014	5,571	1,472-21,083
Exclusive	35	72,9	45	93,8			

Table 12. The Correlation of Colostrum Administration with *Stunting*

Colostrum Administration	*Stunting*				P-*value*	OR	CI
	Yes		No				
	n	%	n	%			
No colostrum	20	41,7	13	27,1	0,197	1,923	0,816– 4,531
With colostrum	28	58,3	35	72,9			

Table 13. The Correlation of Premature Birth with *Stunting*

Premature Birth	*Stunting*				P-*value*	OR	CI
	Yes		No				
	n	%	n	%			
Yes	14	29,2	4	8,3	0,019	4,529	1,367-15,007
No	34	70,8	44	91,7			

Discussion

Stunting can cause growth and development in children to be disrupted, especially when they are not yet 2 years old. In this study, incident *stunting* in toddlers is categorized into *stunting* and no *stunting*. *Stunting* in toddlers can be caused by several factors. Incident *stunting* in the Kalibaru Health Center many cases occur due to mothers of toddlers who have babies with low birth weight and give birth prematurely. In addition, exclusive breastfeeding that is not given to children and a history of diarrheal disease can also cause *stunting*.

Factors of nutritional status, especially low birth weight influence the presence of *stunting* experienced by toddlers. Babies born with low birth weight will suffer *intrauterine growth restriction* thus causing delays in growth and development, unable to adjust the growth that can be achieved at a certain age. This will affect growth disturbances so that it has an impact on their existence *stunting* (Kamila, 2019). In this study, birth weight was categorized into low birth weight and normal birth weight. The results of the bivariate statistical test obtained a score *p-value* < 0.05 indicating that there is a significant correlation with birth weight *stunting*. These results are strengthened by studies from Murti *et al*. (2020) which explain that there is a correlation between low birth weight and events *stunting* in toddlers. Birth weight is generally related to the growth and development of the baby over a long period so if a toddler experiences low birth weight it will have a further impact in the form of failure to thrive. However, this is not in line with the research conducted by Hamal *et al*. (2021). In that study, low birth weight had no association with the incidence of *stunting* in children under five ($p \geq 0,05$).

Infections experienced by toddlers can cause decreased body weight and if this condition lasts a long time and is not immediately given adequate food as a recovery process it can lead to *stunting* (Ministry of Health, 2018). In this study history of diarrheal disease was categorized into a history of diarrhea and no history of diarrhea. The results of statistical testing obtained a p score <0.05 indicating that there was a significant correlation between the history of diarrheal disease and *stunting*. This research is in line with the research of Lift (2018) which explains that there is a correlation between toddlers who have a history of diarrhea to *stunting* where the risk of 2.61 is greater. Diarrhea can cause malnutrition. The presence of infection affects nutritional conditions because of reduced food intake and an increase in catabolism and intake of nutrients needed in the growth process. In addition, malnutrition can also cause infection because it lowers a person's immune system. However, this is different from the study by Safitri & Nindya (2017) which states that there is no significant correlation between diarrhea and *stunting.*

Acute Respiratory Infections disease attacks many in the toddler group. This is because at that age toddlers do not have a strong immune system. Apart from that, at that age toddlers also often do outdoor activities so they are often exposed to dust or other causes of infection (Setyawan, 2022). In this study, a history of Acute Respiratory Infections was categorized into a history of Acute Respiratory Infections and no history of Acute Respiratory Infections. The results of statistical testing obtained a p-score≥ 0.05 indicating that there was no significant correlation between history of Acute Respiratory Infections and *stunting*. This is in line with Sahitarani *et al*. (2020). The research conducted in the Sedayu District did not find a significant association between ARI and its incidence of *stunting* (value≥ 0.05). This may be because ARI infections can be handled properly so that they do not affect food intake, especially on status *stunting.*

Breast milk is a source of nutrition for babies which is exclusive because it is given to babies from 0 months to 6 months. In this study, exclusive breastfeeding was categorized into non-exclusive breastfeeding and exclusive breastfeeding. The results of statistical tests obtained a p score <0.05 indicating that there is a significant correlation between non-exclusive breastfeeding and presence *stunting*. This is by Pangalila *et al.* (2018) who state that there is a correlation between exclusive breastfeeding and the incidence of *stunting* in toddlers. However, this is different from

Setiawan *et al*. (2018) who explain that there is no correlation between exclusive breastfeeding to *stunting*. It was caused by an incident *stunting* not because exclusive breastfeeding is given, but due to other factors that can influence it, such as complementary feeding (MPASI), nutritional intake received by toddlers, and toddler's health status.

Colostrum should be given to newborns because it has benefits. The antibody substances found in colostrum are useful for helping strengthen the immune system in children (Rosha *et al*., 2020). The results of statistical tests obtained a p-score≥ 0.05 indicating that there was no significant correlation between colostrum administration and *stunting*. This is in line with Pertiwi *et al*. (2021) which stated that giving colostrum had no significant correlation with events *stunting* in toddlers, but this research is not in line with Rewo (2020). This research was conducted to find out the mother's parenting style in breastfeeding, one of which is giving colostrum. Based on the analysis, the variable of the practice of giving colostrum has a correlation with the incident *stunting* (p-value = 0,009).

Premature babies experience growth retardation because of their short gestational age and the presence of retardation in the linear growth of the uterus. Full-term babies who are not given adequate nutrition can also experience slowed growth which can be exacerbated if they get an infection. On the other hand, premature babies can suffer developmental delays if they get adequate nutritional support so that their growth and development can still be caught up (Sumardilah & Rahmadi, 2019). The results of statistical tests obtained a p score <0.05 indicating that there is a significant correlation between preterm birth and birth *stunting*. This is in line with Friska's research (2014) which stated that premature birth has a significant correlation with the incidence of *stunting*, with a large OR = 11.5, which means that toddlers who are born prematurely are at risk of 11.5 times greater *stunting*. However, this research is not in line with Ariati's research (2019). In this study, the results showed that premature birth had no correlation with the incidence of *stunting* (p-value≥ 0,05).

Conclusions

Based on the results of the research that has been described regarding the correlation of several factors with events of *stunting* in toddlers at the Kalibaru Bekasi Health Center, it can be concluded that the description of the incident *stunting* in the Kalibaru Health Center in 2022, namely toddlers *stunting* amounted to 48 people (50%) and toddlers who did not *stunting* as many as 48 people (50%). There were 19 (19.8%) of low birth weight, 24 (25%) history of diarrhea, 14 (14.6%) history of Acute Respiratory Infections, 16 (16.7%) non-exclusive breastfeeding, 18 (18.8%) were premature and 33 (34.4%) were not given colostrum. The results of the bivariate analysis showed that there was a correlation with the variables of birth weight, history of diarrheal disease, exclusive breastfeeding, and premature birth (p = <0.05) while in the variables of history of ARI and colostrum administration, there was no association with the incidence of *stunting* (p ≥ 0.05). The researcher advises the health center to provide more information about the prevention of *stunting*.

References

Angkat, A. H. (2018). Penyakit Infeksi dan Praktek Pemberian MP-ASI Terhadap Kejadian *Stunting* Pada Anak Usia 12- 36 Bulan di Kecamatan Simpang Kiri Kota Subulussalam. *Jurnal Dunia Gizi*, *1*(1), 52.

Ariati, L. I. P. (2019). Faktor-Faktor Risiko Penyebab Terjadinya *Stunting* Pada Balita Usia 23-59 Bulan Risk Factors Causes Of *Stunting* In Toddlers Aged 23-59 Months. *Jurnal Oksitosn Kebidanan*, *VI*(1), 28–37

Fitri, L. (2018). *Stunting* di Puskesmas Lima Puluh Pekanbaru. *Jurnal Endurance*, *3*(1), 131–137.

Friska, M. (2014). Faktor Risiko Kejadian *Stunting* pada Balita Usia 12 Bulan di Desa Purwokerto Kecamatan Patebon, Kabupaten Kendal. *Journal of Nutrition College*, 1–27.

Hamal, D. K., Nursyarofah, N., & Qualifa, A. (2021). Jenis Kelamin dan Panjang Badan Lahir sebagai Faktor Kejadian *Stunting* di Kabupaten Majenen Provinsi Sulawesi Barat Tahun 2018 (Analisis Data Riskesdas 2018) Gender and Birth Length as Factors for *Stunting* in Majene Regency , West Sulawesi Province in 2. *Arkesmas*, *6*, 1–7.

Handayani, S., Kapota, W. N., & Oktavianto, E. (2019). Hubungan Status ASI Eksklusif Dengan Kejadian *Stunting* Pada Batita Usia 24-36 Bulan di Desa Watugajah Kabupaten Gunungkidul. *Medika Respati : Jurnal Ilmiah Kesehatan*, *14*(4), 287. https://doi.org/10.35842/mr.v14i4.226

Kamila, A. (2019). Literatur Review Berat Badan Lahir Rendah dengan Kejadian *Stunting* pada Anak. *Low Birth Weight with Stunting in Children*, *10*(2), 311–315. https://doi.org/10.35816/jiskh.v10i2.175

Kemenkes. (2018). *Penyebab Stunting Pada Anak*. https://www.kemkes.go.id/article/view/18052800006/inipenyebab-*stunting*-pada-anak.html

Mugianti, S., Mulyadi, A., Anam, A. K., & Najah, Z. L. (2018). Faktor Penyebab Anak *Stunting* Usia 25-60 Bulan di Kecamatan Sukorejo Kota Blitar. *Jurnal Ners Dan Kebidanan (Journal of Ners and Midwifery)*, *5*(3), 268–278. https://doi.org/10.26699/jnk.v5i3.art.p268-278

Nasution, D., Nurdiati, D. S., & Huriyati, E. (2014). Berat Badan Lahir Rendah (BBLR) dengan Kejadian *Stunting* Pada Anak Usia 6-24 Bulan. *Jurnal Gizi Klinik Indonesia*, *11*(1), 31. https://doi.org/10.22146/ijcn.18881

Pangalila, Y. v, Punuh, M. L., & Kapantow, N. H. (2018). Hubungan Antara Riwayat Pemberian ASI Eksklusif dengan *Stunting* pada Anak Usia 6-24 Bulan di Wilayah Kerja Puskesmas Koya Kabupaten Minahasa. *Kesmas*, *7*(3), 1–7.

Pertiwi, F. D., Prastia, T. N., & Nasution, A. (2021). Hubungan Faktor Sosial Ekonomi dan Riwayat Pemberian ASI Eksklusif dengan Kejadian *Stunting* Pada Balita. *Jurnal Ilmu Kesehatan Masyarakat*, *10*(04), 208–216.

Pratiwi, T. D., Masrul, & Yerizel, E. (2016). Hubungan Pola Asuh Ibu dengan Status Gizi Balita di Wilayah Kerja Puskesmas Belimbing Kota Padang. *Jurnal Kesehatan Andalas*, *5*(3), 661–665. https://doi.org/10.25077/jka.v5i3.595

Pusat Data dan Informasi Kemenkes. (2017). *100 Kabupaten/Kota Prioritas untuk Intervensi Anak Kerdil (Stunting)*.

Putri, A. (2020). Aspek Pola Asuh, Pola Makan, dan Pendapatan Keluarga Pada Kejadian *Stunting*. *Jurnal Kesehatan Tadulako*, *6*(1), 1–9.

Rewa, A. S. R. (2020). Hubungan Pola Asuh Pemberian Asi Dengan Kejadian *Stunting* Pada Anak Usia 6 – 23 Bulan di Wilayah Kerja Puskesmas Patimpeng Kabupaten Bone.

Riskesdas. Hasil Utama Riskesdas.; 2018

Rosha, B. C., Susilowati, A., Amaliah, N., & Permanasari, Y. (2020). Penyebab Langsung dan Tidak Langsung *Stunting* di Lima Kelurahan di Kecamatan Bogor Tengah, Kota Bogor (Study Kualitatif Kohor Tumbuh Kembang Anak Tahun 2019). *Buletin Penelitian Kesehatan*, *48*(3), 169–182. https://doi.org/10.22435/bpk.v48i3.3131

Safitri, C. A., & Nindya, T. S. (2017). Hubungan Ketahanan Pangan dan Penyakit Diare dengan *Stunting* pada Balita 13- 48 Bulan di Kelurahan Manyar Sabrangan, Surabaya. *Amerta Nutrition*, *1*(2), 52–61. https://doi.org/10.20473/amnt.v1.i2.2017.52-61

Sahitarani, Agustina Swastika, Paramashanti, B. A., & Sulistiyawati. (2020). Kaitan *Stunting* dengan Frekuensi dan Durasi Penyakit Infeksi Pada Anak Usia 24-59 Bulan di Kecamatan Sedayu, Kabupaten Bantul.

Setiawan, E., Machmud, R., & Masrul, M. (2018). Faktor-Faktor yang Berhubungan dengan Kejadian *Stunting* pada Anak Usia 24-59 Bulan di Wilayah Kerja Puskesmas Andalas Kecamatan Padang Timur Kota Padang Tahun 2018. *Jurnal Kesehatan Andalas*, *7*(2), 275. https://doi.org/10.25077/jka.v7.i2.p275-284.2018

Setyawan, D. A. (2022). *Epidemiologi Penyakit Menular* (Tahta Media, Ed.). Tahta Media Grup.

Sumardilah, D. S., & Rahmadi, A. (2019). Risiko *Stunting* Anak Baduta (7-24 bulan). *Jurnal Kesehatan*, *10*(1), 93. https://doi.org/10.26630/jk.v10i1.1245

Qolbi, P. A., Munawaroh, M., & Jayatmi, I. (2020). Hubungan Status Gizi Pola Makan dan Peran Keluarga terhadap Pencegahan *Stunting* pada Balita Usia 24 – 59 Bulan. 167–175.