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Factors in the Incidence of Stunting in Children Under Five: Literature Review

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ABSTRACT

Introduction: Stunting is a chronic condition of stunted growth caused by long-term malnutrition. This condition can be measured by the length or height of more than minus two standard child growth standards from the World Health Organization (WHO).

Objective: This literature review study aims to determine factors related to the incidence of stunting in children under five.

Method: This article uses a literature review research method using the PRISMA (Preferred Reporting Items and Meta-analysis) method. Literature searches were carried out on Pubmed, Science Direct, Google Scholar which were published in 2013-2023. The number of articles reviewed in this literature review was 11 articles.

Results: Of the 126 articles, 11 articles came from various regions in Indonesia. There was 1 article that conducted descriptive survey research, 8 cross-sectional research articles, 1 analytical observational article and 1 retrospective research article, which discussed factors related to the occurrence of stunting in children under five and met the inclusion criteria. Factors in the incidence of stunting from the articles obtained include maternal education, economic or family income, low birth weight (LBW), MPASI and nutritional status.

Conclusion: Factors related to the incidence of stunting in children under five are maternal education, child, environment, early breastfeeding, exclusive breastfeeding, early complementary feeding before 6 months of age, food quality, child growth and development, a history of low birth weight (LBW) or prematurity, socioeconomic status.

Keywords: Factors; Events; Stunting; Children; Toddlers

INTRODUCTION

The toddler period is the golden age period or what is called the golden age in a person's stage of development and growth [1]. This period begins when children begin to learn to walk on their own until they can walk and run easily, namely from the age of 12-36 months [2]. Toddlers are grouped into 3 groups, namely infants aged 0-2 years, toddlers aged 2-3 years and pre-school aged >3-5 years [3]. The age of 0-5 years in toddlers is the most important age in life where toddlers experience growth, physical, mental and behavioral development [4]. According to Pem (2016), children who as toddlers have a good start in growth and development will grow up to be healthier when they are adults so that they will have a better life.

Toddlers are a vulnerable group of society who easily experience various health problems, one of which is susceptible to suffering from nutritional disorders [5]. Nutritional problems, especially in toddlers, are a problem that requires great attention from health experts because it is one of the aspects that influences the process of a person's formation, both physically and psychosocially [6]. According to Yuanta et al [6,]) Malnutrition can cause delays in body growth, more importantly delays in brain development and can also cause a decrease or low body resistance to infectious diseases. Nutritional problems, especially in toddlers, are also a big problem and are closely related to general health indicators for toddlers such as morbidity rates and infant and toddler mortality rates [6]. Based on data from the World Health Organization (WHO) in 2017, nutritional problems in the world include the prevalence of wasted (thin) toddlers at 52 million (8%), overweight toddlers at 4 million (6%) and stunted (short) toddlers at 115 million (23%). Most of the children under five in the world who experience underweight, stunting and wasting come from the African and Asian continents (UNICEF, 2017). The prevalence of stunting in children under five based on the World Health Organization (WHO) shows that Indonesia is included in the third country with the highest prevalence in the Southeast Asia Region (SEAR). The average prevalence of stunted toddlers in Indonesia in 2005-2017 was 36.4%. Indonesia is ranked third with the highest stunting prevalence in Southeast Asia after Timor Leste and India, namely 29.6% in 2017. Primary data obtained by researchers showed that Central Sulawesi Province had an average of 27.2% stunting cases in 2023. Consisting of Kab. Donggala had the highest at 34.1%, Kab. Buol as much as 30%, Kab. Banggai 29.1%, Kab. Tolitoli 29%, Parigi Moutong 28.5%, Kab. Banggai Islands, Kab. Poso 26.5% and Kab. Morowali 26% and so on. The figures obtained are still relatively high. so that this figure becomes an initial reference, there is a need for government policies or regulations in terms of reducing and handling stunting cases in the Central Sulawesi region

Stunting is a condition of failure to thrive in toddlers (babies under five years) resulting from chronic malnutrition so that the child is too short for his age. Malnutrition occurs when the baby is in the womb and in the early stages of the baby after birth, but stunting only appears after the baby is 2 years old. Stunting is a chronic condition of stunted growth caused by long-term malnutrition [8].

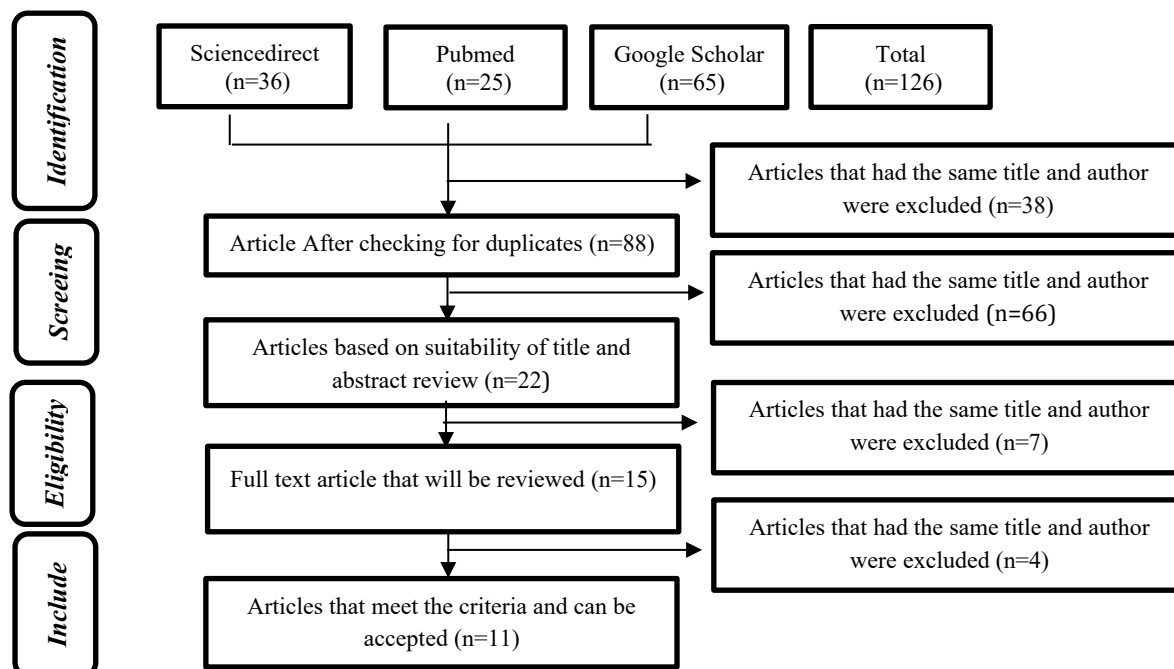
Various factors are related to the incidence of stunting. These factors include the mother's poor nutritional status during pregnancy, the mother's short stature, and poor parenting patterns, especially regarding the behavior and practices of feeding children. Apart from that, mothers who are undernourished during their teenage years, during pregnancy which causes toddlers to be born with LBW, and lactation with exclusive breastfeeding will greatly influence body growth. Other factors that cause stunting are infections in the mother, teenage pregnancies, short birth intervals, infections in toddlers such as diarrhea, economic conditions, work and family livelihoods. Apart from that, low access to health services, including access to sanitation and clean water, is one of the factors that greatly influences children's growth [8].

Factors causing stunting consist of basic factors such as economic factors and maternal education, then intermediate factors such as number of family members, maternal height, maternal age and number of maternal children, then proximal factors such as exclusive breastfeeding, child's age and LBW (Overweight). Low [9].

METHOD

This research is a literature review research using the PRISMA (Preferred Reporting Items and Meta-analysis) method consisting of four stages, namely: identification, screening, eligibility, and inclusion. Literature searches were carried out on Pubmed, Science Direct, and Scopus. The keywords used in the search stage are "Factors that influence the incidence of stunting in Indonesian toddlers". The research inclusion criteria selected were articles published in the period 2013 – 2023, articles in English, the population was mothers with toddlers, the research location was in Indonesia, and articles were free access. Exclusion criteria were case series articles, case reports, systematic reviews, or meta-analysis. Literature that has been accessed will be added to the reference manager application for screening by seeing whether there are duplicate articles in terms of title and author. After that, at the eligible stage, articles are checked that match the inclusion criteria through an abstract review, then a full text assessment is carried out.

Based on the literature search, 126 articles were obtained which were then checked to see if there were similarities in title and author. Next, a review of the abstract is carried out, articles that are not related to factors that influence the incidence of stunting will be excluded. After that, articles related to this research topic will be reviewed in full text. Articles that do not meet the inclusion criteria will be excluded. In the final stage, 11 articles were obtained that met the inclusion criteria. The stages in searching and reviewing articles can be seen in Figure 1.



RESULTS

Based on the results of the literature review, factors found in the incidence of stunting in children under five were found as can be seen in the following table:

Table 1. Results of article analysis of factors in the incidence of stunting in children under five

No	Name of Researcher/Year of Publication	Research Title	Research Design	Location	Research Result
1	Firrahmawati L et al (2023)[10]	Analysis of causal factors that influence the incidence of stunting	Kuantitatif, Rancangan Cross Cectional	Desa Tempelrejo Kecamatan Mondokan Sragen.	Parental income and education are the most influential factors in the occurrence of stunting in children
2	Rahayu Y D et al (2022)[11]	Description of the Factors Causing Stunting Incidents in Toddlers in the Working Area of the Semanding Tuban Community Health Center	Kuantitatif dengan desain penelitian survei deskriptif,	Desa Penambangan	An overview of the factors that cause stunting is maternal education, parental income and exclusive breastfeeding.
3	Nafi'ah R et al (2022)[12]	Factors that cause stunting in children aged 24-59 months	Deskriptif analitik dengan desain case control	Wilayah kerja Puskesmas Blangpidie	Factors that cause stunting include low birth weight, having experienced an infectious disease, low family income and poor

						diet. The most dominant factor causing stunting is a child's poor diet.
4	Kurniati R et al (2021)[13]	Factors that influence the incidence of stunting in children aged 2-5 years	Analitik dengan pendekatan <i>case control</i>	Pulau Mandangin Kabupaten Sampang.		There is the influence of LBW status, genetics, exclusive breastfeeding, nutritious food intake and the environment.
5	Tanzil L et al (2021)[14]	Factors that influence the occurrence of stunting In Toddlers Aged 24-59 Months	Observasional analitik	Puskesmas Simpang Ulim, Aceh Timur		Insufficient energy and protein intake, lack of maternal knowledge, low maternal education and low family income are risk factors for stunting in toddlers aged 24-59 months.
6	Ekawati G et al (2021)[15]	Factors Associated with Stunting in Toddlers	Desain cross sectional	Desa Malinau Hilir Kabupaten Malinau Kalimantan		Factors associated with the incidence of stunting in toddlers include feeding patterns, hygiene patterns, patterns of seeking health services and patterns of psychosocial stimulation..
7	Yuwanti et al (2021)[16]	Factors That Influence Stunting in Toddlers	Kuantitatif dengan pendekatan <i>cross – sectional</i>	Kabupaten Grobogan		Nutritional status, health problems in children, instant food eating habits, and mother's height are related to stunting in toddlers
8	Sanjaya I T I et al (2022)[17]	Risk Factors That Influence Stunting Incidents at Amplas Community Health Center, Harjosari Village 1, District Amplas	Analitik <i>cross sectional</i>	Kota Medan		The results of the study showed that maternal age, maternal educational history, maternal height, pregnancy history, history of exclusive breastfeeding, maternal knowledge, economic status, parenting patterns and nutritional intake were related to the incidence of stunting in toddlers. In the results of the research analysis, what has a significant influence on the incidence of stunting is the history of exclusive breastfeeding and economic status.
9	Sulung N et al (2020)[18]	Factors Causing Stunting in Children Age 24-59 Months in the Padang Gelugur	Deskriptif analitik dengan desain cross-sectional	Kabupaten Pasaman		There is a significant relationship between low economic status, non-exclusive breastfeeding, and non-diverse food diversity with the incidence of stunting..

		Community Health Center Working Area					
10	Dewa I et al (2019)[19]	Factors that influence the incidence of stunting in toddlers	that the of dengan pendekatan <i>retrospective</i>	Survei analitik <i>Case Control</i>	Kabupaten Malang	The factors that influence the occurrence of stunting are in order, namely: family income, exclusive breastfeeding, family size, education of the toddler's father, occupation of the toddler's father, nutritional knowledge of the toddler's mother, family food security, education of the toddler's mother, level of carbohydrate consumption for the toddler, accuracy of giving MP- breast milk, toddler's fat consumption level, toddler's history of infectious diseases, social culture, toddler's protein consumption level, toddler's mother's occupation, nutritional behavior, toddler's energy consumption level, and toddler's immunization completeness.	
11	Ariati L I P et al (2019)[20]	Risk Factors Causing the Occurrence Stunting in Toddlers Aged 23-59 Months		<i>Cross sectional</i>	Desa Panduman.	There is a significant relationship between prenatal factors (mother's age at pregnancy, mother's nutritional status during pregnancy), postnatal factors (exclusive breastfeeding, immunization history, infectious diseases), family characteristics (mother's education, father's occupation and socio-economic status) and the incidence of stunting.	

DISCUSSION

Low Birth Weight (LBW) is the factor most associated with the number of causes of stunting. Where low birth weight (LBW) babies are babies with a birth weight of less than 2500 grams, babies with a low birth weight will experience obstacles to their growth and development due to the mother's lack of nutrition during pregnancy. The most common age that causes an increase in the number of stunting in toddlers is the age range of 6-24 months, where this age is a critical period of growth for toddlers in the first 1000 days of birth until they reach the age of 2 years. Male gender has a prevalence in the incidence of stunting in toddlers compared to females.

Maternal education is related to the incidence of stunting in children under five, where maternal education and knowledge are closely related to nutritional knowledge and nutritional fulfillment for the family, especially children, because mothers with low education, among other things, will find it difficult to absorb nutritional information and therefore be at risk of stunting. The mother's level of education and knowledge is closely related to

nutritional knowledge and nutritional fulfillment for the family, especially children, because mothers with low education, among other things, will find it difficult to absorb nutritional information so they can be at risk of experiencing stunting in their toddlers. 8 Mothers who have good knowledge must be followed by attitudes, skills, and will, as well as practices that lead to improvements in toddler nutrition. Apart from that, it is easier for highly educated mothers to get access to information about nutrition and health [21].

Chronic malnutrition (stunting) is not only caused by one factor, but is caused by many factors that are interconnected with each other. There are 5 main factors that cause stunting, namely incorrect exclusive breastfeeding, dietary diversity, economic status, immunization history and history of infectious diseases. In general, the causes of stunting can be grouped into 3 levels, namely the community level, household (family) level and individual level. At the societal level there is an economic system; education system; health system; and sanitation and clean water systems are factors causing stunting[18].

Economic status is an indirect cause of the incidence of stunting, because the lower a family's income, the lower the nutritional needs of toddlers will be met, so it can indirectly cause toddlers to experience stunting. Toddler Health Services consist of parenting patterns and breastfeeding for toddlers which is related to the incidence of stunting, where parenting patterns influence the growth and development of toddlers from the time they are in the womb until the toddler is born, while poor breastfeeding can hinder the growth and development of toddlers due to lack of nutrition. consumed by toddlers, which puts them at risk of stunting[22].

Exclusive breastfeeding plays a very important role in fulfilling the baby's nutrition. Consuming breast milk also increases the baby's immune system thereby reducing the risk of infectious diseases. 11 The impact of not being given exclusive breast milk can hamper the growth and development of toddlers due to lack of adequate nutrition so that toddlers grow slowly and are at risk of stunting [23]. Good parenting patterns for children can be seen in the practice of providing food or good parenting patterns which have an impact on the growth and development and intelligence of children which is determined from infancy or in the womb [24].

One factor in height stunting can cause stunting, driven by various factors, one of which is genetics. Parents with a short body structure have a high risk of stunting in their children. These results are also in line with Jannah's results conducted in 2019.

One of the indirect causes of the stunting problem is the family's socio-economic status which is influenced by the parents' level of education. If the parents' education is high, the greater the opportunity to earn enough income to be able to live in a good and healthy environment[22]. Family income is an important factor in achieving good nutritional status. Because financial inability causes a lack of ability in the family to meet the family's nutritional intake according to its proper needs. This is in accordance with the results of research conducted by Sari, N. I., and Harianis, S (2022) which states that there is a relationship between the risk factor of family income and the incidence of stunting in children [10].

Based on a review of the eleven articles, the implications of the different research designs. It can be found that parents, especially mothers, need to increase their knowledge and insight regarding the factors that can influence the incidence of stunting in children or toddlers as well as paying attention to feeding patterns, cleanliness, utilizing existing health facilities and providing psychosocial stimulus or encouragement to their toddlers so that children can avoid stunting, in addition to the factors that cause stunting in toddlers, it was found that low birth weight (LBW), age, gender, mother's education level, economic status and health services for toddlers are risk factors that cause stunting in toddlers. This research can be used as input for health officers and cadres to provide education about the importance of providing nutritional intake that can support growth, factors that cause stunting, and prevention of stunting can be disseminated more widely and on target

CONCLUSION

Based on the identification results and review of several sources, it can be concluded that the risk factors for stunting in Indonesia consistently start from maternal, child and environmental factors. Early initiation of breastfeeding that was not carried out, exclusive breastfeeding that was not implemented, early complementary feeding before the age of 6 months, and poor food quality related to energy, protein, calcium, iron and zinc intake were found to increase the risk of stunting. Furthermore, the child's growth and development can be disrupted and may experience stunting if there is a history of low birth weight (LBW) or prematurity, the child is male, there is a history of neonatal illness, a history of frequent and recurrent diarrhea, a history of infectious disease, and the child does not get immunization. The environment also plays a role in causing stunting. Some of them are low socio-economic status, lack of family education, especially mothers, and low family income.

SUGGESTION

This research recommends the importance of preventing stunting by paying attention to maternal education, maternal health, the environment, early breastfeeding, giving MPASI, LBW factors for children or toddlers, complete immunization and economic status to reduce the occurrence of stunting.

REFERENCES

1. Sugeng Hm, Tr, & Snn. Gambaran Tumbuh Kembang Anak Pada Periode Emas Usia 0-24 Bulan Di Posyandu Wilayah Kecamatan Jatinangor. *Jsk*. 2019;4(3):96–101.
2. Potter Pa, Pag, Spa, Ham, Cj, Dc, Rg, & Wd. *Dasar-Dasar Keperawatan*. 2020.
3. Adriani M. *Peranan Gizi Dalam Siklus Kehidupan*. 1st Ed. Jakarta: Prenamedia Group; 2016.
4. Gunawan, Shofar Ina. Penentuan Status Gizi Balita Berbasis Web Menggunakan Metode Z-Score. *Jurnal Infotronik*. 2018;3(2):120–5.
5. Ni'mah Cholifatun. Hubungan Tingkat Pendidikan, Tingkat Pengetahuan Dan Pola Asuh Ibu Dengan Wasting Dan Stunting Pada Balita Keluarga Miskin. *Jurnal Media Gizi Indonesia*. 2015;10(1).
6. Rumahorbo Rm, Syamsiah N, Mirah. Faktor-Faktor Yang Mempengaruhi Tumbuh Kembang Balita Di Wilayah Kerja Puskesmas Pancur Batu Kabupaten Deli Serdang Tahun 2019. *Chmk Health Journal*. 2020;4(2):158–65.
7. Yuanta Y, Tamtomo G, Hanim D. Hubungan Riwayat Pemberian Asi Dan Pola Asuh Ibu Dengan Kejadian Gizi Kurang Pada Anak Balita Di Kecamatan Wongsorejo Banyuwangi. *Jurnal Kesehatan Kusuma Husada*. 2018;9(1).
8. Yudianti, Saeni Rh. Pola Asuh Dengan Kejadian Stunting Pada Balita Di Kabupaten Polewali Mandar. *Jurnal Kesehatan Manarang*. 2016;2(1):21–5.
9. Nursyamsiyah, Sobrie Y, Sakti B. Faktor-Faktor Yang Mempengaruhi Kejadian Stunting Pada Balita Usia 24-60 Bulan. *Jurnal Ilmu Keperawatan Jiwa [Internet]*. 2021;4(3):611–22. Available From: <https://doi.org/10.36729>
10. Firrahmawati L, Wahyuni Es, Khotimah N, Munawaroh M. Analisis Faktor Penyebab Yang Mempengaruhi Kejadian Stunting Analysis Of Causal Factors Influencing Stunting Incidents. *Jurnal Kebidanan*. 2023;12(1):28–38.
11. Rahayu Yd, Yunariyah B, Jannah R. Gambaran Faktor Penyebab Kejadian Stunting Pada Balita Di Wilayah Kerja Puskesmas Semanding Tuban. *Jurnal Kesehatan Masyarakat (Undip)*. 2022 Mar 29;10(2):156–62.
12. Nafi'ah R, Ahmad A. Faktor Penyebab Kejadian Stunting Pada Anak Usia 24-59 Bulan Factors Causing Stunting Incidents In Children Age 24-59 Months. *Jurnal Riset Gizi*. 2022;10(2):102–8.
13. Kurniati R, Aisyah S, Anggraini H, Wathan Fm. Faktor-Faktor Yang Mempengaruhi Kejadian Stunting Pada Balita Usia 24-60 Bulan. *Jurnal 'Aisyiyah Medika [Internet]*. 2022;7(2):11–23. Available From: <https://doi.org/10.36729>
14. Tanzil L, Hafriani. Faktor-Faktor Yang Mempengaruhi Terjadinya Stunting Pada Balita Usia 24-59 Bulan. *Jurnal Kebidanan*. 2021;7(1):25–31.
15. Ekawati G, Rokhaidah. Faktor-Faktor Yang Berhubungan Dengan Kejadian Stunting Pada Balita Di Desa Malinau Hilir Kabupaten Malinau Kalimantan Tahun 2021. *Media Informasi [Internet]*. 2022;18(2):52–9. Available From: <https://ejournal2.poltekkestasikmalaya.ac.id/index.php/bmi>
16. Yuwanti, Mulyaningrum Fm, Susanti Mm. Faktor-Faktor Yang Mempengaruhi Stunting Pada Balita Di Kabupaten Grobogan. *Cendekia Utama Jurnal Keperawatan Dan Kesehatan Masyarakat Stikes Cendekia Utama Kudus*. 2021;74–84.
17. Sanjaya Iti, Ayu Ms. Faktor-Faktor Risiko Yang Mempengaruhi Kejadian Stunting Di Puskesmas Amplas Kelurahan Harjosari 1 Kecamatan Amplas Kota Medan Tahun 2020 Risk Factors Affecting Stunting Events In Puskesmas Amplas Harjosari 1 Medan 2020. *Jurnal Kedokteran Dan Kesehatan-Fakultas Kedokteran Universitas Islam Sumatera Utara*. 2022;21(2):152–62.
18. Sulung N, Maiyanti H. Faktor Penyebab Stunting Pada Anak Usia 24-59 Bulan Di Wilayah Kerja Puskesmas Padang Gelugur, Kabupaten Pasaman. Vol. 2020, | *Jurnal Pembangunan Nagari | Volume 5 Nomor 1 Edisi Juni*. 2020.
19. Suparia I Dewa N, Purwaningsih H. Faktor-Faktor Yang Mempengaruhi Kejadian Stunting Pada Balita Di Kabupaten Malang [Internet]. 2019. Available From: <http://ejournal.malangkab.go.id/index.php/kr>
20. Ariati Lip. Faktor-Faktor Resiko Penyebab Terjadinya Stunting Pada Balita Usia 23-59 Bulan Risk Factors Causes Of Stunting In Toddlers Aged 23-59 Months. *Oksitosin, Kebidanan*. 2019;iv(1):28–37.
21. Khoiriah Yk, Evayanti Y, Putri Rd, Maternity D. Faktor Stunting Pada Balita Usia 12-59 Bulan Di Upt. Puskesmas Gedung Surian, Lampung Barat. *Jurnal Kebidanan Malahayati*. 2020;6(3):316–21.

22. Rahmawati Nf, Fajar Na, Idris H. Faktor Sosial, Ekonomi, Dan Pemanfaatan Posyandu Dengan Kejadian Stunting Balita Keluarga Miskin Penerima Pkh Di Palembang. *Jurnal Gizi Klinik Indonesia*. 2020 Jul 25;17(1):23.
23. Sampe Sa, Toban Rc, Madi Ma. Hubungan Pemberian Asi Eksklusif Dengan Kejadian Stunting Pada Balita Relationship Between Exclusive Breastfeeding And Stunting In Toddlers. *Jurnal Ilmiah Kesehatan Sandi Husada [Internet]*. 2020;11(1):448–55. Available From: <https://Akper-Sandikarsa.E-Journal.Id/Jiksh>
24. Kurniawati E. Faktor Risiko Kejadian Stunting Pada Balita Di Kabupaten Kerinci Provinsi Jambi. *Journal Of Health Science And Physiotherapy*. 2020 Jul;2(2):143–51.