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## The Correlation between the History of Antenatal Care Visits during The Covid -19 Pandemic and Stunting Incidents



**Ratih Mega Septiasari<sup>1</sup>, Dian Mayasari<sup>2</sup>, Yesika Nadya<sup>3</sup>**

<sup>1,2,3</sup>Midwifery Department, Malang Institute of Health Technology Widya Cipta Husada, Indonesia

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### Abstract

Stunting occurs due to chronic malnutrition that has been going on for a long time, namely from the time the child is in the womb until the child is 2 years old. Limited access to antenatal care is one of the causes of stunting. The COVID-19 pandemic has had an impact on health services, including maternal and child health services. The purpose of this study was to analyze the correlation between the history of antenatal care visits during the COVID-19 pandemic and the incidence of stunting. This was a quantitative study using an observational case-control research design with a retrospective approach. The population was all mothers who had babies aged 0–12 months in Kebonagung Village area, Pakisaji District, Malang Regency. The sampling technique used total sampling. The sample was 70 respondents. The data obtained were analyzed using the Chi-squared correlation test with a p value of 0.05. The results showed that there was a significant correlation between antenatal care visits during the COVID-19 pandemic and the incidence of stunting in the Kebonagung Village area, Pakisaji District, Malang Regency, with a p value of = 0.000 ( $p < 0.05$ ). with moderate closeness and a correlation coefficient value of ( $r$ ) = 0.2352. It is expected that health workers will provide counseling, information, and education to pregnant women about the importance of prenatal checks to prevent stunting.

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✉Correspondence Address:

Malang Institute of Health Technology Widya Cipta Husada – East Java, Indonesia

Email : [ratihmega17@gmail.com](mailto:ratihmega17@gmail.com)

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## INTRODUCTION

The incidence of short toddlers is one of the nutritional problems experienced by toddlers in the world today. In 2017, 22.2%, or around 150.8 million toddlers in the world, were stunted. However, this figure has decreased when compared to the stunting rate in 2000, which was 32.6%. In 2017, more than half of the stunted toddlers in the world came from Asia (55%), while more than a third (39%) lived in Africa (Kemenkes RI, 2018).

Based on the Indonesian Nutrition Status Study (SSGI) in 2021, the prevalence of stunting in Indonesia is 24.4%, while the target prevalence of stunting in 2024 is 14%. Based on data released by the Indonesian Toddler Nutrition Status Survey (SSGBI), the target and achievement of stunting prevalence in East Java from 2019 to 2021 continue to decline. Even though it has not yet reached the annual target, it has recorded a decline from 26.86% in 2019 to 25.64% in 2020 and then to 23.5% in 2021. Meanwhile, the prevalence of stunting in Malang Regency is 25.7% (Kemenkes RI, 2021).

Stunting in children is a form of nutrient deficiency during the first 1000 days of life. This will have an impact on children's physical development, which is irreversible, so that it will cause delays in physical growth, mental development, and children's health status. This can be a predictor of the low quality of a country's human resources (Ernawati, 2019).

Factors causing stunting include maternal factors. One of those included in the maternal factor is antenatal care (ANC). Antenatal Care (ANC) is a health service provided by health workers for mothers during pregnancy and carried out in accordance with the service standards set out in the Midwifery Service Standards to detect the risk of complications of pregnancy and childbirth and to maintain the health of the fetus. According to Amini (2016) non-standard ANC visits were 57.8% more common in stunted toddlers than in non-stunted toddlers. Mothers who carry out antenatal care less than three times and do not check their pregnancies with doctors or midwives can be at risk of stunting in their children. Regular ANC visits can detect early pregnancy risks in a mother and her fetus, especially those related to nutritional problems (Heryanto, 2021).

In the COVID-19 pandemic situation, the government made a policy of limiting almost all

routine services; one example is maternal and neonatal health services and other health service facilities. In addition, this epidemiological situation has caused many mothers to be worried, anxious, and afraid to do pregnancy checks at the puskesmas or other health services such as the independent midwife clinic for fear of contracting the Corona virus. The low number of antenatal care visits or examinations will result in a lack of knowledge about proper pregnancy care, the risk of early pregnancy not being detected, and complications or comorbidities that are not being detected (Ningsih, 2021).

Based on the description above, the researcher wants to examine "the correlation between the history of antenatal care visits during the COVID-19 pandemic and the incidence of stunting in the Kebonagung Village area, Pakisaji District, Malang.

## METHODS

This study was a quantitative study using an observational case-control research design with a retrospective approach. The location of the study was Rejoyoso hamlet area, Kebonagung Village, Pakisaji District, Malang Regency. The study was conducted on January 2022. The population was all mothers who had babies aged 0–12 months in the Rejoyoso hamlet area, Kebonagung Village, Pakisaji District, Malang Regency, 70 babies. The sampling technique used in this study was total sampling, so the entire population was used as the research sample, 70 infants. The dependent variable in this study was the incidence of stunting, and the independent variable was the history of ANC visits during the COVID-19 pandemic. Stunting categories and indicators used height for age with a standard Z-score value of very short: Z-score < -3.0 SD, short: Z-score -3.0 SD to Zscore < -2.0 SD, normal: Z-score -2.0 SD to Zscore 2.0 SD. The data collection used observation sheets and Maternal and Child Health (MCH) books, by means of home visits for anthropometric measurements and filling out observation sheets about the history of antenatal care visits based on the Maternal and Child Health (MCH) book documentation. The data obtained were analyzed by a Chi-squared correlation test with a p-value of 0.05 (p value < 0,05).

**RESULTS****Table 1: Characteristics of Respondents**

Aspect	Description	Frequency	Percent (%)
Age	< 20 years	0	0
	≥ 20 - ≤ 35 years	53	76
	> 35 years	17	24
Parity	Primigravida	20	29
	Multigravida	50	71
Education	Primary school	19	27
	Secondary school	35	50
	Hight school	16	23
Worker	House wife	34	49
	Work	36	51

Based on table 1, the majority of respondents aged 20-35 years, namely 53 respondents (76%), the majority of multiparity as many as 45 people (64%), most of the secondary education as many as 35 respondents (50%) and most of the respondents work as many as 36 respondents (51%).

**Table 2: History of Antenatal Care Visits during the Covid 19 Pandemic**

No	Antenatal Care Visits	Frequency	Percent (%)
1.	Standard	37	53
2.	Non-standard	33	47
	Total	70	100

Based on table 2, it was found that most of the respondents had a history of antenatal care visits during the Covid 19 pandemic according to standards, namely 37 people (53%).

**Table 3: Stunting Incidents**

No	Stunting Incidents	Frequency	Percent (%)
1.	Severly Stunted	16	23
2.	Stunted	23	33
3.	Normal	31	44
	Total	70	100

Based on table 3, it was found that most of them had normal body length (PB)/height (TB) according to age, namely 31 babies (44%).

**Table 4: History Antenatal Care Visits during the Covid 19 Pandemic with Stunting Incidents**

		History of Antenatal Care Visits during the Covid 19 Pandemic				
Variable	Categoric	Standard		Tidak sesuai standar		P (Value)
		N	%	n	%	
Stunting	a. Severly Stunted	0	0	16	23	0,000
	b. Stunted	10	14	13	19	
	c. Normal	27	38	4	6	

\* Chi Square analysis  $p < \alpha = 0,05$

From the table it can be seen that 16 infants (23%) aged 0-12 months experienced very short stunting events with a history of non-standard ANC visits and 13 infants (19%) aged 0-12 months experienced short stunting events with a history of inappropriate ANC visits. standard, the highest proportion was in infants aged 0-12 months experiencing very short stunting events with a history of non-standard ANC visits totaling 16 infants (23%) but there were infants aged 0-12 months experiencing short stunting events with a history of ANC visits according to standards totaling 10 baby (14%). As for the 27 babies who were not stunted (normal) with a history of standard ANC visits and 4 babies who were not stunted (normal) with a history of non-standard ANC

visits, the highest proportion was in infants aged 0-12 months who were not stunted (normal). With a history of ANC visits according to standards totaling 27 babies (38%), but there are babies aged 0-12 months who are not stunted (normal) with a history of ANC visits not according to standards totaling 4 babies (6%). Statistical test results obtained p value:  $< 0.000$  ( $< \alpha: 0.05$ ) so that  $H_0$  was rejected and  $H_1$  was accepted, that is, there was a correlation between the history of antenatal care visits during the Covid 19 pandemic and the incidence of stunting in the Kebonagung Village area, Pakisaji District, Malang Regency.

## DISCUSSION

Based on the results of the study, it was found that out of 70 babies aged 0-12 months, 39 babies (56%) were stunted (16 very short and 23 short) in the Rejoyoso hamlet area, Kebonagung Village, Pakisaji District, Malang Regency. The highest proportion was in infants aged 0-12 months experiencing very short stunting events with a history of non-standard ANC visits totaling 16 infants (23%) but there were infants aged 0-12 months experiencing short stunting events with a history of ANC visits according to standards totaling 10 infants (14%) and not according to standard as many as 13 babies (19%). Statistical test results obtained p value:  $< 0.001$   $< \alpha: 0.05$  so that  $H_0$  was rejected and  $H_1$  was accepted, namely there was a correlation between the history of Antenatal Care visits during the Covid 19 Pandemic and the incidence of stunting in the Kebonagung Village area, Pakisaji District, Malang Regency.

The results of this study are in line with research by Torlesse, et.al (2016) which shows that mothers who perform ANC  $< 4$  times during pregnancy have a stunting prevalence in toddlers of 91.9%. Pregnant women's health services (ANC) are very important for the health of mothers and their wombs where it was found that mothers who had less than four ANC visits during pregnancy were more likely to have stunted children at the age of 0-23 months. compared to mothers who had four or more ANC visits (Torlesse, et al, 2016). High coverage of antenatal care in a population is necessary to optimize maternal health and nutrition, as well as fetal growth and development. Evidence from studies of available health services in some LMICs shows that a mother attending  $\geq 4$  antenatal care (ANC) visits with  $\geq 1$  visit with a skilled medical professional has been associated with a reduced risk of stunting (Vaivada, et al, 2020).

The results of this study are also in line with the research of Hutasoit et al. (2020), which shows that there is a correlation between antenatal care and the incidence of stunting with a p value of 0.000 (p value 0.05). Pregnant women who do not

routinely carry out antenatal care will be at 4x the risk of experiencing anemia. Anemia in pregnant women is caused by a lack of iron intake during pregnancy. Mothers who do not regularly consume Fe tablets are 3.46 times more at risk for anemia. Anemia in pregnancy can cause a decrease in the flow of oxygen and nutrients to the placental tissue, which will have an impact on the disruption of the nutritional status of the fetus (Noor et al., 2022). Meanwhile, mothers with anemia have the potential to give birth to babies with low body weight and subsequently have the potential for stunting (Hutasoit et al., 2020). Rahmi et al. (2016) found that children aged 24-59 months were less likely to be stunted if they weighed between 2.5 and 3.9 kg or 4 kg at birth, compared to children weighing 2.5 kg.

The results of another study showed that there was a significant correlation between ANC prenatal care and chronic energy deficiency (CED). Respondents who had fewer ANC pregnancy check-ups were 2.7 times more at risk of suffering from Chronic Energy Deficiency (CED) compared to respondents who had good ANC prenatal checkups (Fitrianingtyas et al., 2018). If pregnant women are malnourished, then the intake of nutrients consumed will be used to supplement the nutritional deficiencies of the mother. Thus, the fetus does not get the nutrients it needs. If the fetus nutrition is not fulfilled, the mother will be at risk of giving birth to a baby with a low birth weight. Babies with low birth weight are very at risk of experiencing stunting (Qoyyimah et al, 2021).

In this COVID-19 pandemic situation, there are many restrictions on almost all routine services including maternal and newborn health services. For example, pregnant women are reluctant to go to the puskesmas or other health care facilities for fear of infection, there are suggestions to postpone pregnancy checks and classes for pregnant women, and there is unpreparedness for services in terms of personnel and infrastructure including personal protective equipment. This causes maternal and newborn health services to be one of the services

affected, both in terms of access and quality. Antenatal Care Services (ANC) in normal pregnancies at least 6x with details of 2x in Trimester 1, 1x in Trimester 2, and 3x in Trimester 3. At least 2x examined by a doctor during visit 1 in Trimester 1 and during visit 5 in Trimester 3 (Wiraswati, 2022). Standard ANC is necessary because the antenatal phase is an important period for preventing stunting. In this phase, fetal growth occurs and is the optimal period for child development up to the first 1000 days of life. Environmental and nutritional factors in this phase will affect fetal growth, brain development, digestive tract, metabolism, and the immune system. Nutrient intake is very important to support the first 1000 day phase of life, including amino acids, iron, iodine, calcium, zinc, magnesium and vitamins (Saleh, et al, 2021).

During ANC visits, pregnant women will receive a thorough examination of their pregnancy, receive nutritional counseling, receive folic acid and iron supplements, as well as proper health education. So that all of these can prevent mothers from experiencing anemia, prevent mothers from giving birth prematurely, and prevent small babies and babies from getting adequate nutrition from the womb. Thus, it can reduce the incidence of stunting in toddlers (Hutasoit et al., 2020).

## CONCLUSION

Based on the results of the study, it was concluded that there was a correlation between the history of antenatal care visits during the Covid 19 pandemic and the incidence of stunting. In the COVID-19 pandemic situation, there were many restrictions on almost all routine services including maternal and newborn health services. Pregnant women who do not routinely perform ANC are at risk of experiencing anemia and chronic energy deficiency. This has the potential to give birth to babies with low body weight, which then has the potential for stunting.

## SUGGESTION

It is hoped that health workers will strive to guarantee quality antenatal care (integrated ANC) even in a COVID-19 pandemic situation while maintaining health protocols in an effort to prevent stunting in the first 1000 days of life.

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## CONFLICTS OF INTEREST

The Authors in this research have no affiliations with or involvement in any organization or entity with any financial interest or non financial interest in the subject matter or materials discussed in this manuscript.

## AUTHOR CONTRIBUTIONS

Author 1 is in charge of coordinating the course of research, participating in research, compiling research reports, and publishing journal articles. Authors 2 and 3 participated in research, the preparation of research reports, and journal publications.

## REFERENCES

- Amini, A. (2016). Hubungan Kunjungan Antenatal Care dengan Kejadian Stunting Pada Balita Usia 12-59 Bulan Di Kabupaten Lombok Utara Provinsi NTB. Diakses pada <http://digilib.unisayogya.ac.id/2381/1/Naskah%20Publikasi.pdf>
- Ernawati, N. (2019). Kejadian Balita Stunting di Posyandu Apel Desa Jambearjo Kecamatan Tajinan Kabupaten Malang. *Jurnal Kesehatan Mesencephalon*, 5(2), 59-64
- Fitriani, I., Pertiwi, F.D., Rachmania, W. (2018). Faktor-Faktor Yang Berhubungan Dengan Kejadian Kurang Energi Kronis (Kek) Pada Ibu Hamil Di Puskesmas Warung Jambu Kota Bogor. *Hearty Jurnal Kesehatan Masyarakat*, 6 (2)
- Heryanto, M. L. (2021). Kunjungan Antenatal Care dengan Kejadian Stunting pada Anak Usia 24-36 Bulan. *Jurnal Ilmiah Pannmed*, 16(1), 1-8
- Hutasoit, M., Utami, K.D., Afriyiliani, N.F. (2020). Kunjungan Antenatal Care Berhubungan Dengan Kejadian Stunting. *Jurnal*

- Kesehatan Samodra Ilmu*, 11(1).  
<https://doi.org/10.55426/jksi.v11i1.13>
- Kemenkes RI. (2021). *Buku Saku Hasil Survei Status Gizi Indonesia (SSGI) Tingkat Nasional, Provinsi, dan Kabupaten/Kota Tahun 2021*. Jakarta: Kementerian Kesehatan Republik Indonesia
- Kemenkes, RI. (2018). *Laporan Nasional Riskesdas 2018*. Jakarta: Badan Penelitian dan Pengembangan Kesehatan.
- Noor, M.S., Andrestian, M.D., Dina, R.A., Ferdina, A.R., Dewi, Z., Hariati, N.W., Rachman, P.H., Setiawan, M.I., Yuana, T.W., Khomsan, A. (2018). Analysis of Socioeconomic, Utilization of Maternal Health Services, and Toddler's Characteristics as Stunting Risk Factors. *Matern Child Nutr.* 14(4). doi: [10.1111/mcn.12617](https://doi.org/10.1111/mcn.12617)
- Qoyyimah, A.U., Wintoro, P.D., Hartati, L., Chasanah, M. (2021). Hubungan Riwayat Ibu Hamil Kekurangan Energi Kronis Dengan Kejadian Stunting Pada Balita Usia 3-5 Tahun Di Puskesmas Jatinom Klaten. *Prosiding Seminar Nasional UNIMUS*, Volume 4, 2021
- Rachmi, C. N., Agho, K. E., Li, M., & Baur, L. A. (2016). Stunting, underweight and overweight in children aged 2.0–4.9 years in Indonesia: Prevalence trends and associated risk factors. *PLoS ONE*, 11(5), e0154756 [10.1371/journal.pone.0154756](https://doi.org/10.1371/journal.pone.0154756).
- Saleh, A., Syahrul, S., Hadju, V., Adriani, I., dan Restika, I. (2021). Role Of Maternal in Preventing Stunting: A Systematic Review. *Gac. Sanit.* 2021;35:S576–S582. doi: [10.1016/j.gaceta.2021.10.087](https://doi.org/10.1016/j.gaceta.2021.10.087).
- Torlesse, H., Cronin, A.A., Sebayang, S.K., Nandy, R. (2016). Determinants of stunting in Indonesian children: Evidence from a cross-sectional survey indicate a prominent role for the water, sanitation and hygiene sector in stunting reduction. *BMC Public Health.* 2016;16:1–11. doi: [10.1186/s12889-016-3339-8](https://doi.org/10.1186/s12889-016-3339-8).
- Vaivada, T., Akseer, N., Akseer, S., Somaskandan, A., Stefopoulos, M and Bhutta, ZA, (2020). Stunting in childhood: an overview of global burden, trends, determinants, and drivers of decline. *Am J Clin Nutr.* 2020 Sep; 112(Suppl 2): 777S–791S. doi: [10.1093/ajcn/nqaa159](https://doi.org/10.1093/ajcn/nqaa159).
- Wiraswati, Atun. (2022). *Pelayanan Antenatal Care (ANC) Pada Masa Pandemi Covid-19*. Kemenkes Dirjen Yankes.