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The Analysis of Factors Influencing Stunting Prevention Behavior in Pregnant Women

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ABSTRACT

Background: Stunting is a serious health issue in Indonesia, impacting children's growth and development due to chronic malnutrition, recurrent infections, and harmful environmental factors. This study aimed to examine factors influencing stunting prevention behavior in pregnant women
Subjects and Method: A quantitative study with a path analysis approach. It was conducted in Probolinggo Regency using cluster random samping, based on inclusion criteria. The sample size consisted of 220 respondents spread across four community health centers (Puskesmas). The research variables include independent varaibles: exposure to cigarette smoke, socio-economic status, and social support; intervening variables: acces to healthcare services and health status; and dependent variable: stunting prevention behavior. The research instrument useda questionnaire based on the theoryof factors influencing stunting prevention in pregnant women, Data analysis was performed using path analysis with Amos software.
Results: Social support on stunting prevention behavior through health status of pregnant women (Z-value = 1.23; p-value = 0.022). Social support on stunting prevention behavior in pregnant women through access to healthcare services (Z-value = -3.92; p-value = 0.00). Cigarette smoke exposure on stunting prevention behavior through health status of pregnant women (Z-value = 10.53; p-value = 0.00). Socio-economic status on stunting prevention behavior through health status of pregnant women (Z-value = 2.19; p-value = 0.03).
Conclusion: Health promotion targeting the improvement of socio-economic status and social support, as well as preventing tobacco smoke exposure, plays a significant role in influencing stunting prevention behavior among pregnant women. Health status and access to healthcare services act as mediators that link social support, tobacco smoke exposure, and socio-economic status to stunting prevention behavior. By implementing community-based health promotion strategies, we can prevent stunting in a more holistic and sustainable manner.

Keywords: influencing factors, stunting prevention, pregnant women, health promotion

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BACKGROUND

Stunting in Indonesia remains a significant public health issue that affects the growth and development of children due to chronic malnutrition, recurrent infections, and harmful environmental factors. The

prevalence of stunting in Indonesian children was reported at 24.4% in 2021, showing a decrease from previous years but still above the WHO threshold of 20% (Bahrun & Wildan, 2022; Naryono, 2023). This condition not only disrupts physical growth but also has long-term implications for cognitive development and future productivity (Akbar et al,. 2023). The Indonesian government has set a target to reduce stunting prevalence to 14% by 2024 through various interventions, including improving maternal and child nutrition and increasing access to healthcare services (Suparji et al,. 2024).

The stunting prevalence trend in Probolinggo District from 2020 to 2024, based on weighing results, shows a significant decrease. In 2020, it was 16.44%, dropping to 12.70% by February 2024. The national target for stunting prevalence in 2024 is 14%, indicating that Probolinggo District will likely be below the national target (Nisa, 2024).

Preliminary studies found that local government efforts, such as the implementation of eight strategic convergence actions for stunting reduction, have been applied. These convergence actions involve various sectors and integrated programs to ensure effective interventions. The eight actions include: providing nutritious food, improving sanitation and clean water access, monitoring child growth and development, improving healthcare services, increasing public awareness of stunting, enhancing access to education and women empowerment, involving the community in stunting programs, and coordinating related agencies. However, these efforts have not been fully optimized.

Therefore, stunting prevention behavior among pregnant women includes several important aspects, such as adequate nutrition intake, routine health check-ups, and supplementation of nutrients like iron tablets and other micronutrients. Additionally, socio-economic factors, exposure to cigarette smoke, social support, healthcare access, and maternal health status also play vital roles in stunting prevention.

In this context, health promotion is an essential strategy to raise awareness and understanding among pregnant women regarding behaviors and actions that can be taken to prevent stunting (Rachmawati, 2019). Health promotion is carried out through various media, such as counseling, information dissemination through healthcare workers, and the use of information technology to reach pregnant women in various regions, especially those with limited access (Jatmika et al,. 2019).

However, despite various efforts, stunting prevention behavior among pregnant women is still influenced by factors such as low education levels, limited access to healthcare, and insufficient knowledge about proper nutrition. Therefore, research on the factors influencing stunting prevention behavior in pregnant women is crucial to finding appropriate solutions to reduce stunting prevalence in Indonesia.

This study aims to explore the factors influencing stunting prevention behavior in pregnant women. Additionally, it will discuss the role of health promotion in changing the behavior of pregnant women in stunting prevention, as well as strategies that can be applied to improve the effectiveness of health promotion in reducing stunting.

SUBJECTS AND METHOD

1. Study Design

This research is a quantitative study with a path analysis approach aimed at analyzing the direct and indirect effects of factors such as exposure to cigarette smoke, social support, socio-economic status, access to

healthcare services, and maternal health status on stunting prevention behavior by pregnant women. The research design used is cross-sectional, where data is collected at a single point in time. This study will be conducted in Probolinggo District, East Java, from August 2024 to February 2025.

2. Population and Sample

The study population is adults aged 19-59 years and the research sample is 200 adults aged 19-59 years selected using snowball sampling.

3. Study Variables

The population in this study consists of all pregnant women residing within the working areas of public health centers (Puskesmas) in Probolinggo District, with inclusion criteria: pregnant women at least in their second trimester, residing for a minimum of one year in the study area, and willing to be respondents. Exclusion criteria include women with communication or cognitive impairments or those with a history of severe pregnancy complications (e.g., severe preeclampsia). The sampling method used is cluster random sampling, based on the inclusion criteria. The sample size is 220 respondents, distributed across Puskesmas Krucil, Puskesmas Tiris, Puskesmas Krejengan, and Puskesmas Kraksan. The research variables include exogenous variables: exposure to cigarette smoke and socio-economic status; mediator variables: social support, access to healthcare services, and health status; and endogenous variable: stunting prevention behavior.

4. Operational Definition of Variables

Socio-economic status: The social and economic condition of pregnant women used to determine health status.

Exposure to cigarette smoke: The presence or absence of family members who smoke within the household.

Social support: Family support for pregnancy as an effort to prevent stunting.

Access to healthcare services: The ways in which pregnant women obtain healthcare services for themselves and their fetus.

Health status: The physical and/or medical condition of the mother during pregnancy, reflecting the presence or absence of health issues that may affect both the mother and the fetus.

Stunting prevention behavior in pregnant women: The actions and habits performed by pregnant women to maintain their own health and the health of their fetus in order to prevent fetal growth disturbances leading to stunting.

5. Study Instruments

The research instrument used is a questionnaire based on the theory of factors influencing stunting prevention in pregnant women, designed to measure socio-economic status, exposure to cigarette smoke, social support, access to healthcare services, health status, and stunting prevention behavior in pregnant women. The questionnaire has undergone validity and reliability testing to ensure the accuracy and consistency of the data collected. It serves as the measurement tool to gather data from the study subjects on these specific factors related to stunting prevention.

6. Data analysis

The analysis will be conducted in several stages: Univariate and multivariate normality will be tested using Skewness, Kurtosis, and Critical Ratio (c.r.). Path analysis was performed using the AMOS software.

7. Research Ethics

This study has obtained ethical approval from Dr. Moewardi Hospital with the approval number 1.306/VI/HREC/2025.

RESULTS

1. Sample Characteristics

The characteristics of the 220 pregnant women respondents showed that. The majority of husbands fall into the early

adulthood category (ages 25–44), with a frequency of 155 individuals, accounting for 70.45% of the total.

Table 1. Characteristics of the categorical data sample

Characteristics	Category	Frequency	Percentage
Husband's age	Adolescent (10-19)	4	1,82%
	Young adult (20-24)	46	20,91%
	Early adulthood (25-44)	155	70,45%
	Middle adulthood (45-59)	15	6,82%
Husband's Education	Elementary School	65	29.50%
	Junior High School	40	18.20%
	High School	90	40.00%
	College	25	11.40%
Husband's Occupation	Civil Servant	15	6.80%
	Private Employee	97	44.10%
	Trader	40	18.20%
	Farmer	3	1.40%
	Others	65	29.50%
Maternal age	Adolescent (10-19)	27	12%
	Young adult (20-24)	70	32%
	Early adulthood (25-44)	123	56%
Mother's Education	Elementary School	45	20.50%
	Junior High School	57	21.90%
	High School	89	40.50%
	College	29	13.20%
Mother's Occupation	Housewife	189	85.90%
	Civil Servant	8	3.60%
	Private Employee	3	1.40%
	Trader	17	7.70%
	Farmer	3	1.40%
Pregnancy Order	1st pregnant	91	41.40%
	2nd pregnant	70	31.80%
	3th pregnant	44	20.00%
	4th pregnant	14	6.40%
	5th pregnant	1	0.50%
History of miscarriage	Never had a miscarriage	182	82.70%
	Ever had a miscarriage	38	17.30%

This indicates that most of the husbands are in their prime productive and reproductive age group. The majority of mothers are in the early adulthood category (ages 25–44), with 123 individuals (56%), indicating that most pregnancies occur during this optimal reproductive age. Husbands' Education: 40% of husbands had a high school education, 29.5% had only completed elementary school, A small percentage, and 11.4%, had a college education. Mothers' Education: the majority (40.5%) had completed high school, 20.5% of mothers had only completed elementary school,

13.2% had a college education, and indicating a group of mothers with broader knowledge about health and nutrition.

Husbands' Employment: most husbands worked as private sector employees (44.1%), 18.2% were traders, and 6.8% worked as civil servants. Mothers' Employment: the majority of mothers (85.9%) were housewives, focusing primarily on child-rearing and household management, a small percentage of mothers worked in formal sectors, with 3.6% being civil servants and 1.4% working in private companies. This demographic information highlights the significant role of housewives within the family, who need adequate support in accessing healthcare and nutrition services. The largest proportion of respondents are experiencing their first pregnancy, with 91 individuals (41.4%), suggesting a high number of primigravida (first-time pregnant women). The second pregnancy accounts for 70 women (31.8%), indicating that a considerable number have prior experience with childbirth. Smaller proportions are in their third (44 women, 20.0%), fourth (14 women, 6.4%), and fifth (1 woman, 0.5%) pregnancies. This reflects a declining trend in the number of women with higher pregnancy orders, possibly due to changing family planning practices or socioeconomic factors.

Most respondents, 182 women (82.7%), have never had a miscarriage, indicating a relatively healthy obstetric history in this sample. However, 38 women (17.3%) reported having experienced a miscarriage, which highlights the importance of monitoring maternal health and providing proper prenatal care, especially for those with previous pregnancy loss.

2. Path Analysis

Figure 1 showed the SEM results model which presents the measurement components of The Effects on Stunting Prevention Behavior Among Pregnant Women.average value of 7.67, the smallest value is 0 and the largest value is 12.

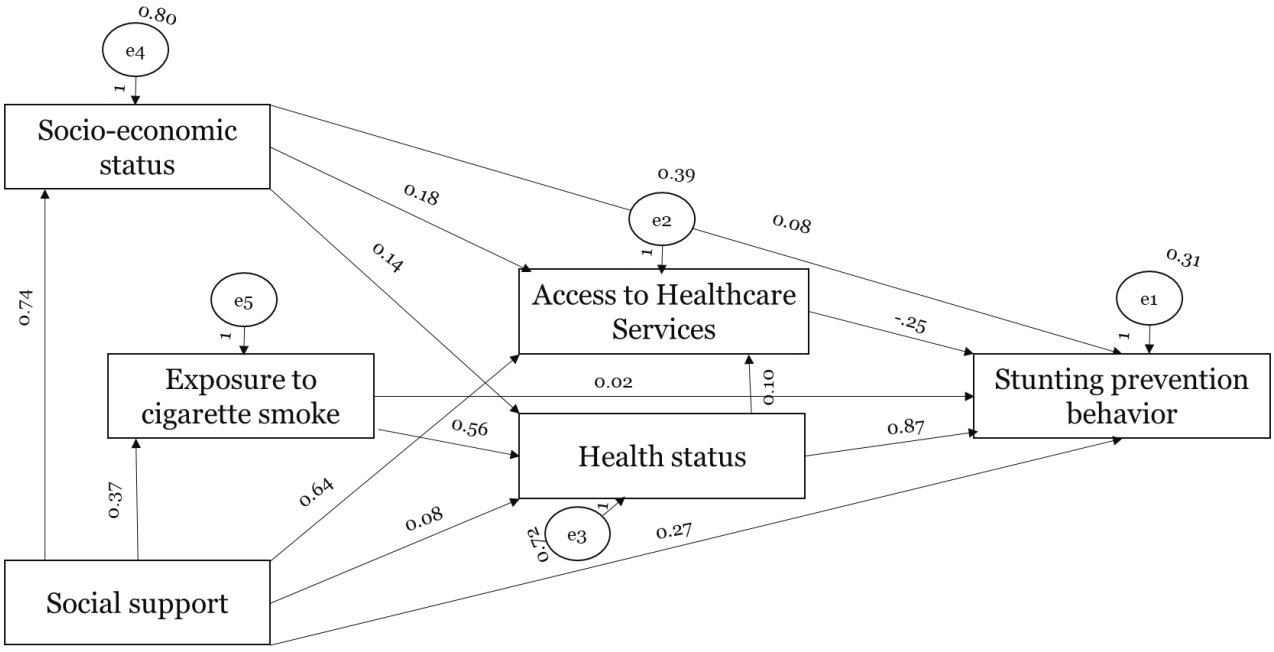

Figure 1. Path Analysis Model with Estimated Effects on Stunting Prevention Behavior Among Pregnant Women

Table 2. Direct Effects of Variables Effects on Stunting Prevention Behavior Among Pregnant Women

Dependent Variable(s)		Independent Variable(s)	b	SE	CI 95%		p
					Lower Limit	Upper Limit	
Direct effect							
Stunting Prevention Behavior	←	Socio-economic status	0.08	0.04	-0.07	0.37	0.080
	←	Exposure to Cigarette Smoke	0.03	0.4	0.36	0.62	0.515
	←	Social Support	0,27	0,6	0.35	0.59	< 0.001
	←	Access to Healthcare Services	-0.25	0,6	-0.53	0.00	< 0.001
	←	Health Status of Pregnant Women	0.87	0.4	0.69	0.98	< 0.001
Indirect effect							
Exposure to Cigarette Smoke	←	Social Support	0.37	0.06	0.25	0.49	< 0.001
Socio-economic status	←	Social Support	0.74	0.04	0.61	0.84	< 0.001
Health Status of Pregnant Women	←	Exposure to Cigarette Smoke	0.56	0.5	0.44	0.67	< 0.001
	←	Social Support	0.08	0.06	0,26	0.50	0.215
	←	Socio-economic status	0.14	0.06	-0.06	0.35	0.028
Access to Healthcare Services	←	Socio-economic status	0.18	0.05	0.00	0.37	< 0.001
	←	Social Support	0.64	0.05	0.67	0.91	< 0.001
	←	Health Status of Pregnant Women	0.10	0.04	0.01	0.23	0.008
N Observation = 220							
p= 0.72 RMSEA= 0.00 CFI= 1 TLI= 1.05 RMR= 0.02							

Path analysis showed that social support has a positive and significant effect on tobacco smoke exposure (b= 0.37; 95% CI= 0.25 to 0.49; p< 0.001), socio-economic status (b= 0.74; 95% CI= 0.61 to 0.84; p< 0.001), access to healthcare services (b= 0.18; 95% CI= 0.35 to 0.59; p< 0.001), and stunting prevention behavior (b= 0.27; 95% CI= 0.67 to 0.91; p<0.001). Tobacco smoke exposure significantly affects the health

status of pregnant women (b= 0.56; 95% CI= 0.44 to 0.67; p< 0.001), while socio-economic status also significantly affects access to healthcare services (b= 0.18; 95% CI= 0.01 to 0.37; p< 0.001). In addition, the health status of pregnant women significantly influences access to healthcare services (b= 0.10; 95% CI= 0.01 to 0.23; p= 0.001) and stunting prevention behavior (b= 0.87; 95% CI= 0.69 to 0.98; p< 0.001). On the other hand, access to healthcare services has a significant negative effect on stunting prevention behavior (b= -0.25; 95% CI= -0.53 to 0.01; p< 0.001), although this may be influenced by other factors such as the quality of services or access barriers.

However, some relationships show no significant direct effect. Social support does not have a significant direct effect on the health status of pregnant women (b= 0.08; 95% CI= 0.26 to 0.50; p= 0.022). Socio-economic status also does not significantly affect the health status of pregnant women (b= 0.14; 95% CI= -0.06 to 0.35; p= 0.003) or stunting prevention behavior (b= 0.08; 95% CI= -0.07 to 0.37; p= 0.008).

Mediators function to reveal the mechanism or process through which the effect of an independent variable is transmitted to the dependent variable. This study shows that Health Status and Access to Healthcare Services act as mediators connecting social support, cigarette smoke exposure, and socio-economic status with stunting prevention behavior. These mediator variables play an essential role in explaining the effect of independent variables on the observed outcomes (stunting prevention behavior).

The structural model has been tested and demonstrates an excellent fit with the data. The most influential factor affecting stunting prevention behavior is health status, which is significantly influenced by social support and access to healthcare services. Although socioe-conomic status and exposure to cigarette smoke have very small and negative effects, these factors still play a role, albeit at a lower level.

DISCUSSION

Stunting is a chronic nutritional problem affecting children, primarily caused by prolonged nutritional deficiencies from early infancy, potentially continuing into toddlerhood and impairing both physical growth and cognitive development (Kemenkes RI, 2020). In efforts to combat stunting, the role of pregnant women is vital, as maternal health and behavior during pregnancy directly influence fetal growth and development (Nasir et al,. 2021). Stunting prevention behavior among pregnant women is influenced by various factors that can be categorized as either direct or indirect. Based on the results of the path analysis, this study aims to identify the factors influencing stunting prevention behavior among pregnant women in Probolinggo Regency and to provide insights for health promotion strategies.

1. Direct Effect

This study shows that social support has a significant positive direct effect on several important variables in stunting prevention among pregnant women. First, social support has a positive effect on tobacco smoke exposure. Social support plays a crucial role in protecting pregnant women from tobacco smoke exposure, which is a risk factor for stunting. This support can come from family, friends, or the community to create a smoke-free environment and ensure adequate nutrition for pregnant women (Irfan et al,. 2024). Exposure to cigarette smoke during pregnancy has been shown to result in higher stunting prevalence in children of parents exposed to tobacco smoke, emphasizing the need for a

smoke-free environment. Implementing comprehensive smoke-free policies can improve maternal and child health outcomes, thus reducing the risk of stunting (Muchlis et al,. 2023).

Social support has a positive and significant effect on socio-economic status. Social support can provide greater access to economic resources, thereby improving their well-being. Pregnant women who face financial difficulties further exacerbate the lack of social support during pregnancy (Bedaso et al,. 2021). This is supported by other studies that indicate pregnant women with higher household incomes are predicted to receive better social support, according to a study conducted in Mexico in 1998. It is argued that individuals living in lower socio-economic classes tend to have a more limited relational radius and prefer self-isolation from social activities because involvement in social activities requires money to attend events, which can make them feel neglected by society (Nobis and El-Kayed, 2019).

Social support also plays a role in improving access to healthcare services, indicating that pregnant women who receive greater social support are more likely to access the healthcare services they need. Without adequate access, they may not be aware of the health risks associated with pregnancy or how to maintain their own health and that of their baby (Hafizah et al,. 2020). Lack of knowledge can lead to poor decision-making and potentially cause health problems during pregnancy (Araújo et al,. 2025).

Social support also has a significant direct effect on stunting prevention behavior, meaning that better social support encourages pregnant women to take more stunting prevention actions, such as undergoing regular health check-ups and following medical advice related to nutrition and health. This support, especially from family and communities, can positively influence the knowledge, attitudes, and behaviors of pregnant women related to nutrition, healthcare, and overall well-being, ultimately impacting their child's health and reducing the risk of stunting (Mindarsih et al,. 2024).

Tobacco smoke exposure has a significant direct effect on the health status of pregnant women. This indicates that exposure to tobacco smoke worsens the health condition of pregnant women, which can contribute to an increased risk of pregnancy-related health complications, such as fetal complications or maternal health issues. Exposure to cigarette smoke during pregnancy significantly increases the risk of various health complications for both the mother and the developing fetus. These complications include fetal issues such as low birth weight and preterm birth, as well as maternal health problems such as abnormal bleeding and placental complications (Mayangsari and Mahmood, 2021). Other research also mentions that exposure to cigarette smoke during pregnancy can harm both maternal and infant health, which ultimately increases the risk of stunting in children (Choirunnisa et al,. 2022; Delpisheh et al,. 2006). The findings from this study emphasize the importance of tobacco control policies around pregnant women to prevent greater health impacts.

Socio-economic status has a significant direct effect on access to healthcare services, indicating that pregnant women with a higher socio-economic status are more likely to have better access to healthcare facilities. Women from higher socio-economic backgrounds have better access to maternal healthcare services, while those from lower socio-economic positions report lower utilization (Yee et al., 2022). Several studies also found that socio-economic

barriers (with an emphasis on education, employment, and income) have influenced access to antenatal care services among pregnant women from low socio-economic backgrounds (Simkhada et al,. 2008). The findings from this study demonstrate a strong influence between the family's economic capacity and the pregnant woman's ability to access adequate medical services, which is crucial in efforts to prevent stunting.

Furthermore, the health status of pregnant women has a significant direct effect on access to healthcare services and stunting prevention behavior. It indicates that the better the health of the pregnant woman, the more likely they are to access the necessary healthcare services and be more active in adopting stunting prevention behaviors. Good health in pregnant women empowers them to undergo optimal pregnancy care and follow medical advice that can prevent stunting in their children. Several studies also support that healthier pregnant women are more likely to seek and utilize healthcare services, and they are also more likely to engage in behaviors that prevent stunting in their children. This is because good health during pregnancy is associated with increased knowledge of health practices, better access to resources, and a greater capacity to implement preventive measures (Adam et al., 2024; Aris Tyarini et al., 2025).

An interesting finding was that access to healthcare services has a significant negative effect on stunting prevention behavior. This result may suggest that although pregnant women have access to healthcare services, other factors such as the quality of services or barriers in receiving the appropriate services could influence their behavior in preventing stunting. It is possible that easier access to healthcare services does not always correlate with stunting prevention behavior if the services received are not optimal, or if there are external factors that hinder more effective preventive actions. Access to healthcare is very important for pregnant women, and the quality of services and barriers in accessing appropriate services can significantly affect their behavior in preventing stunting. Factors such as inadequate nutrition education, cultural beliefs, and financial or geographical limitations may hinder pregnant women from effectively utilizing the available services and adopting stunting prevention measures (Adam et al., 2024).

However, several relationships tested showed no significant direct effects, indicating that although there is a relationship between some variables, their effects are not large enough or strong enough to directly influence outcomes in the context of stunting prevention in pregnant women. First, social support did not have a significant direct effect on the health status of pregnant women. Although social support may influence the health of pregnant women, its effect is not strong or relevant in this context. This could be due to other more dominant factors determining the health status of pregnant women, such as medical or lifestyle factors. This finding does not align with studies showing that strong social support can reduce stress, improve compliance with healthcare, and provide the emotional support needed during pregnancy (Ketut et al., 2007; Duhita et al., 2024).

Next, socio-economic status did not show a significant effect on the health status of pregnant women or on stunting prevention behavior. Although there is an effect, the results indicate that the influence of socio-economic status on these two variables is relatively small and not significant enough to have a large impact on stunting prevention in pregnant women.

This could be influenced by other factors, such as the availability of healthcare services or stronger social support, which may play a more significant role in determining the health of pregnant women and stunting prevention behaviors. This finding does not align with previous studies that also show that socio-economic factors often have a more complex and varying impact depending on the local context of behavior (Pacagnella et al., 2014; Picauly and Toy, 2013).

Finally, cigarette smoke exposure showed a very small and insignificant effect on stunting prevention behavior. It indicates that although there is a relationship between these two variables, the effect is very small and not significant enough to influence stunting prevention behavior in pregnant women. It is possible that other deeper factors, such as awareness levels or access to prevention programs, play a more significant role in influencing stunting prevention behavior. This finding contradicts research showing that exposure to tobacco smoke, whether actively by the pregnant women or passively from others' smoke, significantly affects behavior and outcomes for stunting prevention. This impact has multiple sides, influencing both maternal health during pregnancy and child development after birth (Ratnawati et al., 2024).

2. Indirect Effects

This study found that social support affects stunting prevention behavior through health status. Social support does not have a significant indirect effect on stunting prevention behavior through health status. While social support may improve the health condition of pregnant women, its effect on stunting prevention behavior through health status is not significant enough to be considered a crucial mechanism in this study.

On the other hand, there is an indirect effect of social support on stunting prevention behavior through access to healthcare services. This study found that social support has a negative effect on stunting prevention behavior through healthcare access. The negative Z-value suggests that the higher the social support, the more likely pregnant women are to take stunting prevention actions by improving their access to healthcare services. This finding highlights the importance of social support in improving pregnant women's access to healthcare, which in turn influences stunting prevention behavior.

There is an indirect effect of tobacco smoke exposure on stunting prevention behavior through health status. This suggests that tobacco smoke exposure has a significant impact on stunting prevention behavior through the health condition of pregnant women. Tobacco smoke exposure can damage the health of pregnant women, which in turn affects their ability to prevent stunting. Therefore, tobacco smoke exposure can be an obstacle in stunting prevention efforts for pregnant women.

There is an indirect effect of socio-economic status on stunting prevention behavior through health status. It indicates that socio-economic status influences stunting prevention behavior in pregnant women through the health status of pregnant women. Improving socio-economic status tends to improve pregnant women's access to better health resources, which then contributes to stunting prevention behavior. This suggests that socio-economic factors can improve maternal health, which in turn affects their efforts to prevent stunting.

There is an indirect effect of socio-economic status on stunting prevention behavior through access to healthcare services Pregnant women with higher

socio-economic status may have better access to better healthcare services; however, other factors such as barriers in healthcare services may hinder stunting prevention efforts. Nevertheless, this result shows that socio-economic status remains an important factor in improving pregnant women's access to healthcare services, which in turn influences stunting prevention behavior.

These findings indicate that social support, tobacco smoke exposure, and socio-economic status have indirect effects on pregnant women's stunting prevention behavior through mediators such as access to healthcare services and health status of pregnant women. On the other hand, not all indirect effects were significant, such as the path of social support through the health status of pregnant women, which indicates that other factors besides social support may be more decisive in determining stunting prevention behavior in pregnant women. Thus, this study strengthens the understanding that the influence of these variables on stunting prevention behavior in pregnant women not only depends on direct relationships but also involves intermediary factors that should be considered when designing policies or interventions aimed at reducing stunting.

Health promotion plays a vital role in transforming maternal behavior to reduce stunting risk. Programs that emphasize health awareness, social support, and community empowerment are particularly effective in improving maternal health and behavior. Recommended actions for health promotion include: Nutrition education and the importance of antenatal care: Educational programs that inform mothers about the significance of consuming nutritious food such as folic acid, protein, and micronutrients can help prevent stunting during pregnancy. Improving access to healthcare services: Strengthening primary healthcare systems, facilitating regular antenatal checkups, and ensuring access to reproductive health services are critical for ensuring adequate maternal care. Enhancing social support: Organizing support groups, such as *posyandu* (integrated service posts), prenatal groups, and community forums, can provide emotional support, information, and learning opportunities regarding stunting prevention behaviors. Controlling and preventing tobacco smoke exposure: Given the negative health effects on both mother and fetus, it is essential to implement tobacco control campaigns targeting pregnant women and their families. Socio-economic empowerment: Although its impact was minor in this study, improving socio-economic well-being remains important for enabling pregnant women to access the resources needed for better healthcare and nutrition.

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CONFLICTS OF INTEREST

There was no conflict of interest in this study.

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