



THE PARTICIPATION OF PREGNANT WOMEN IN HELPING FATHERS TO QUIT SMOKING TO PREVENT STUNTING THROUGH A HEALTH BELIEF MODEL APPROACH IN SAMARINDA

Maya Marinda¹, Nur Rohmah², Ike Anggraini Gunawan³

¹Masters of Public Health, Universitas Mulawarman, Jl. Kuaro, Gn. Kelua, Samarinda Ulu, Kota Samarinda, Kalimantan Timur 75119, Indonesia

²Department of Health Promotion, Faculty of Public Health, Universitas Mulawarman, Jl. Kuaro, Gn. Kelua, Samarinda Ulu, Kota Samarinda, Kalimantan Timur 75119, Indonesia

³Department of Biostatistic, Faculty of Public Health, Universitas Mulawarman, Jl. Kuaro, Gn. Kelua, Samarinda Ulu, Kota Samarinda, Kalimantan Timur 75119, Indonesia

*nurrohmah@fkm.unmul.ac.id

ABSTRACT

The 2018 Indonesia Basic Health Research reported that 80.5% of individuals engaged in indoor smoking. Indoor smoking poses significant health risks, notably to pregnant women and their fetuses, with one potential consequence being stunting. Pregnant women, while at risk from cigarette smoke, also play a crucial role in preventing indoor smoking to mitigate stunting risks. This study aims to explore the participation of pregnant women in supporting their partners' efforts to quit smoking, utilizing the health belief model as a framework. This was observational research with a cross-sectional design. Purposive sampling was utilized for 343 respondents, with inclusion criteria for pregnant women with smoking partners. The study applied the health belief model, examining socio-demographic factors, perceived threats (severity and susceptibility), expectations (benefits, barriers, and self-efficacy), and cues to action. Path analysis was employed for data interpretation. The findings indicate a negative significant relationship between the socio-demographic construct and perceived threats. Similarly, socio-demographic factors are significantly related to expectations in a negative manner. A positive significant relationship was observed between perceived threats and the participation of pregnant women. However, expectations did not exhibit a significant direct impact on the participation of pregnant women. Conversely, cues to action demonstrated a positively significant relationship with pregnant women's participation.

Keywords: health belief model; perception; pregnant; smoking; stunting

How to cite (in APA style)

Rohmah, N., Marinda, M., & Gunawan, I. A. (2025). The Participation of Pregnant Women in Helping Fathers to Quit Smoking to Prevent Stunting through A Health Belief Model Approach in Samarinda. *Indonesian Journal of Global Health Research*, 7(3), 273-282. <https://doi.org/10.37287/ijghr.v7i3.5738>.

INTRODUCTION

Indonesia is among the countries with the highest number of smokers globally, ranking third after India and China (WHO, 2021). The Global Adult Tobacco Survey (GATS) 2021 conducted in Indonesia also revealed that 33.5% of the Indonesian population, approximately 68.9 million individuals, are active smokers. Additionally, 59.3% or around 12.6 million people are passive smokers exposed to second-hand smoke within their homes (WHO, 2021). The 2018 Basic Health Research (Riskesdas) data highlighted that in East Kalimantan, the proportion of individuals aged 10 years and older who smoke indoors reached 80.5%, with the figure rising to 80.93% in Samarinda, East Kalimantan (Kemenkes, 2018; Riskesdas, 2018). One of the most vulnerable groups affected by indoor tobacco smoke exposure is pregnant women and their unborn children. A significant health consequence of such exposure is stunting. Stunting is a major public health issue in Indonesia, including in Samarinda. Stunting impairs physical development and affects cognitive abilities and future productivity. Despite numerous interventions, stunting remains a persistent nutritional challenge in Indonesia, with a prevalence rate of 22.3%, as reported in the 2023 Indonesian

Health Survey (Kemenkes RI, 2023).

Smoking is an indirect risk factor contributing to the incidence of stunting and maternal anemia (Diba et al., 2024; Rahmiwati et al., 2024; Rokom, 2023; Banudi, 2022). Second-hand smoke poses similar health risks as active smoking due to harmful constituents such as nicotine and carbon dioxide, which can impair the blood supply carrying oxygen and nutrients to the fetus, increasing the risk of miscarriage or fetal abnormalities (Rahma, 2016). Even smoking has influence reproductive health.(Marmi & Riyadi, 2025) Pregnant women are often exposed to tobacco smoke from their partners who smoke indoors or from other family members who smoke within the household. Research has demonstrated that exposure to tobacco smoke is a factor influencing low birth weight (Talitha et al., 2020). To mitigate the risks of tobacco smoke exposure, the Indonesian government has implemented smoke-free area regulations, including in Samarinda. The Samarinda government issued Regulation No.8 of 2017, designating smoke-free zones in specific locations such as healthcare facilities, educational institutions, playgrounds, places of worship, public transportation, workplaces, public spaces, and indoor sports facilities. However, this regulation does not address smoking within private homes (Samarinda, 2017).

Pregnant women, who often also serve as homemakers, play a crucial role in addressing indoor smoking by active smokers. However, they face a dilemma due to societal norms, particularly in patriarchal contexts, which may limit their decision-making power within the household, including in preventing indoor smoking (Rohmah, 2023). Studies on smoking cessation among fathers or husbands highlight the need for family support to motivate, remind, or prohibit smoking (Friebely et al., 2013). Some fathers or husbands decide to quit smoking out of concern for the risks their children might face (Meghea et al., 2018).The Health Belief Model (HBM) is a widely used theoretical framework in health promotion and smoking behavior research. HBM explores various perceptions regarding an individual's vulnerability, the seriousness (threat) of a disease, and the barriers and benefits of adopting particular health behaviors. Additionally, HBM addresses the cues to action and an individual's confidence in adopting specific health behaviors (Abraham, 2015).

Despite the established understanding of the risks associated with tobacco smoke exposure, particularly among pregnant women, there remains a knowledge gap regarding the role of pregnant women in supporting their partners' smoking cessation efforts, specifically in the context of preventing stunting. While regulations exist to limit smoking in public spaces, the lack of policies addressing smoking within homes presents a significant challenge to protecting vulnerable populations, such as pregnant women and their unborn children, from the adverse effects of second-hand smoke.This study will fill the knowledge gap by examining the involvement of pregnant women in their partners' efforts to quit smoking, using the Health Belief Model as a framework. The research aims to seek the role of pregnant women in their partners' smoking cessation efforts from the perspective of the Health Belief Model.

METHOD

This study employed an observational research design using the cross-sectional method. The cross-sectional design was chosen to provide a snapshot of the characteristics and conditions of pregnant women with smoking husbands at a specific point in time. This design is beneficial for assessing the prevalence of outcomes and exposures and for investigating associations between variables. The data collection took place from September 2024 to November 2024). The population for this study consisted of all pregnant women in

Samarinda. According to the projected data from the Health Department of Samarinda for 2024, the total population of pregnant women was 14,121. The sample for this study was specifically pregnant women whose husbands were smokers. Using the Lemeshow formula, the required sample size was a minimum of 343 respondents.. The sampling technique used in this study was purposive sampling. This method involves selecting samples that meet specific inclusion criteria, which in this case were: pregnant women, having a husband who smokes, and being willing to participate as respondents. The use of purposive sampling ensured that the sample was representative of the target population, meeting the specific inclusion criteria.

Data were collected using Google Forms questionnaires completed by enumerators through interviews with the subjects. The Google Forms questionnaire facilitated efficient data collection, and the validity and reliability tests ensured the quality of the data. Before the data collection, informed consent was obtained from all participants. To ensure the quality of the data, the questionnaires underwent validity and reliability tests. This questionnaire was compiled from various sources and consists of several sections. Data collection was carried out using a questionnaire consisting of three main sections:

1. Sociodemographic: It consists about respondent characteristics and cigarette smoke exposure. It consists 19 questions.
2. Threat: This section measured the extent of the respondents perceive. Perceived susceptibility and perceived severity. It consists of 14 questions. seven questions about perceived susceptibility and seven question about perceived severity
3. Expectation: This section measured the extent of the respondents perceived about her evaluation about what barrier that they have and what benefit they can get if their husband quit smoking. It consists Perceived barrier, benefits, and self-efficacy It consists of nine questions about barrier, six questions about benefits and six equations about self-efficacy.
4. Cues to action: This section measured the presence or absence of smoking restrictions in the home and support from family. It consists of three questions.
5. Participation of pregnant woman: measuring the participation of pregnant women in helping their husbands quit smoking. It consists of seven questions.

Tabel 1.
Validity and reliability questionnaire

Variable	Item Questionaire	R-test	Validity	Cronbach Alpha	Reliability
Threat (Perceived Susceptibility)	HBM1a	0.737	Valid	0.765	Reliable
	HBM1b	0.698	Valid		Reliable
	HBM1c	0.431	Valid		Reliable
	HBM1d	0.498	Valid		Reliable
	HBM1e	0.679	Valid		Reliable
	HBM1f	0.549	Valid		Reliable
	HBM1g	0.610	Valid		Reliable
Threat (Perceived Severity)	HBM2a	0.742	Valid	0,761	Reliable
	HBM2b	0.620	Valid		Reliable
	HBM2c	0.562	Valid		Reliable
	HBM2d	0.748	Valid		Reliable
	HBM2f	0.575	Valid		Reliable
	HBM2g	0.414	Valid		Reliable
	Expectation (Perceived Barriers)	HBM3a	0,670		Valid
HBM3c		0,582	Valid	Reliable	
HBM3d		0.514	Valid	Reliable	
HBM3e		0.707	Valid	Reliable	
HBM3g		0.388	Valid	Reliable	
HBM3i		0.382	Valid	Reliable	
Expectation (Benefit)	HBM4a	0.921	Valid	0.974	Reliable
	HBM4b	0.906	Valid		Reliable
	HBM4c	0.874	Valid		Reliable
	HBM4d	0,875	Valid		Reliable
	HBM4e	0.902	Valid		Reliable
	HBM4f	0.923	Valid		Reliable

Variable	Item Questionnaire	R-test	Validity	Cronbach Alpha	Reliability
Expectation self- efficacy	HBM5a	0.678	Valid	0.779	Reliable
	HBM5b	0.776	Valid		Reliable
	HBM5c	0.621	Valid		Reliable
	HBM5d	0.487	Valid		Reliable
	HBM5f	0.433	Valid		Reliable
Cues to Action	HBM6a	0.495	Valid	0.605	Reliable
	HBM6b	0.441	Valid		Reliable
	HBM6c	0.380	Valid		Reliable
Partisipation of pregnant woman	PS1	0.380	Valid	0,748	Reliable
	PS2	0.429	Valid		Reliable
	PS3	0.453	Valid		Reliable
	PS4	0.362	Valid		Reliable
	PS5	0.647	Valid		Reliable
	PS6	0.650	Valid		Reliable

Validity with R-table (0.3610)

The data analysis was conducted using SEM-PLS. This technique analyses the causal relationships between variables, including both direct and indirect effects. SEM-PLS analysis allows for examining how independent variables influence the dependent variable through multivariable providing a comprehensive understanding of the relationships among the variables.

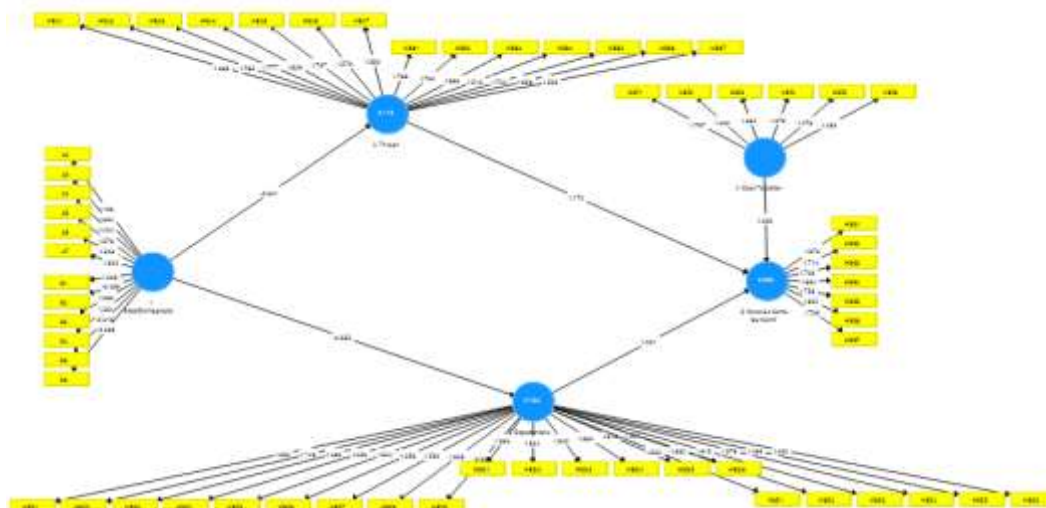
RESULT

Table 2
Respondent Characteristic

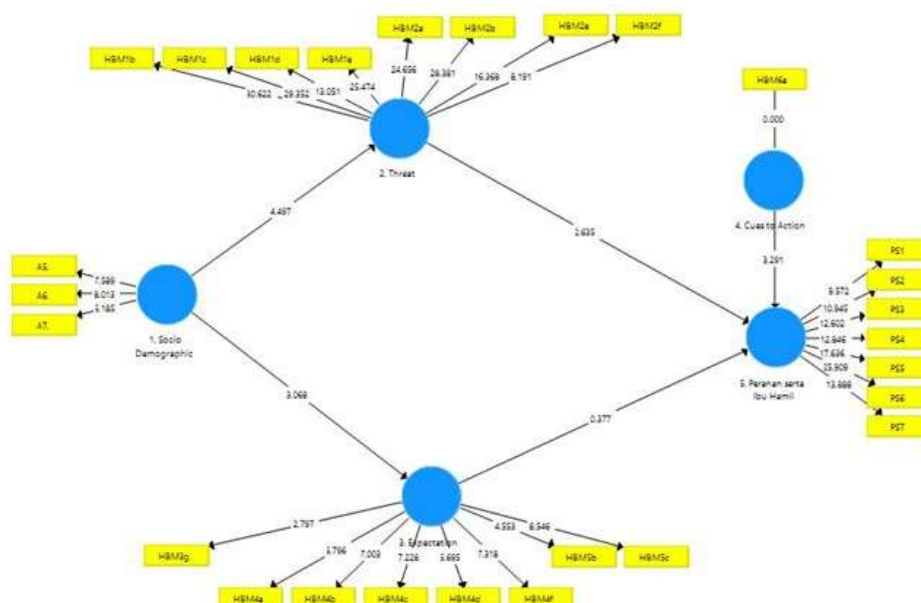
Respondents Characteristic	Frequency (n=343)	%
<i>Age</i>		
< 30 years	243	70.8
≥ 30 years old	100	29.2
<i>Where usual smoke</i>		
In the house	32	9.3
Outside the house	202	58.9
Both of them	109	31.8
<i>Level of Education</i>		
Not in school	1	0.3
Elementary School /equivalent	30	8.7
Junior High School/equivalent	47	13.7
Senior High School/equivalent	194	56.6
College	71	20.7
<i>Occupation</i>		
Private	37	10.8
Housewife	278	81.0
Self employed	6	1.7
Government Employe	5	1.5
Others	17	5
<i>number of pregnancies</i>		
First	77	22.4
Second	119	34.7
Third or more	147	42.9
<i>Family Income</i>		
UMK or under	175	51
Above UMK	168	49
<i>The present of family member who smoke in the house</i>		
Yes	230	67
No	113	32.9
<i>Family member who smoke in the house</i>		
Father or father in law of pregnant mother	37	10.8
Mother or mother in law of pregnant mother	3	0.9
Siblings (Siblings of pregnant mother)	44	12.8

Respondents Characteristic	Frequency (n=343)	%
Another family	22	9.56
More than one	7	4
<i>Presence of people who often visit the house to smoke</i>		
Yes	159	56
No	184	44
<i>People who visit and smoke in the house</i>		
Guest	78	40
Other family	64	33
Guest and other family	43	22

Based on the results above, it is known that the majority of pregnant women respondents are under 30 years old (70%), with a secondary education level, namely high school graduates or equivalent (56,6%) with a family income level mostly below the minimum wage of Samarinda city (81%). The majority of respondents were pregnant women with a third pregnancy or more (77%). For family members who smoke in the house, some respondents stated that there are other family members who smoke in the house beside their husband (67%), such as parents (11,7%), siblings (12,8%) and another family (9,56%). As for frequent visitors, some of them smoke inside the house (56%), while others do not (44%).



Picture 1. SEM-PLS Construction Health Belief Models (before)



Picture 2. SEM-PLS Construction Health belief Models (after)

Table 2.
Bootstrapping Calculation Results of Research Data

Construction	Original Sample	Sample mean	Standar Deviation	t-test	p-value
Socio demographic → Threat	-0,229	-0,242	0,051	4,497	0,000
Socio demographic → Expectation	-0,205	-0,210	0,067	3,068	0,002
Threat → Participations of Pregnant Woman	0,157	0,162	0,060	2,635	0,009
Expectation → Participations of Pregnant Woman	0,032	0,039	0,084	0,377	0,707
Cues to Action → Participations of Pregnant Woman	0,183	0,189	0,056	3,291	0,001

Based on the table above, it is found that:

a. Sociodemographic -> threat

The path coefficient value of -0.029 indicates that there is an inverse relationship between Socio demographic and Threat; when the Socio demographic value increases, the Threat value tends to decrease. The relationship between Socio demographic and Threat is statistically significant with a pvalue = 0.000 (pvalue <0.05).

b. Socio demographic -> Expectation

This relationship is statistically significant (p < 0.05). The negative path coefficient (-0.205) indicates that there is a negative relationship between Socio demographic and Expectation. This means that the higher the value of Socio demographic variables, the lower the Expectation.

c. Threat -> Participations of Pregnant Woman:

This relationship is statistically significant (p < 0.05). The positive path coefficient (0.157) indicates that there is a positive relationship between Threat and Participations of Pregnant Woman. This means that the higher the perceived threat (Threat), the higher the participation of pregnant women. This is in accordance with the general logic that when someone feels threatened, they tend to be more active or involved in preventive or countermeasures.

d. Cues to Action -> Participations of Pregnant Woman

This relationship is statistically significant (p < 0.05).The positive path coefficient (0.183) indicates that there is a positive relationship between Cues to Action and Participations of Pregnant Women.

DISCUSSION

Based on Health Belief Model construction, we can focus on four construction that includes six indicators that are included in Health Belief Model. Sociodemographic factors (education, age, family income, and others), Threat (perceived susceptibility and perceived severity), Expectation (perceived benefits, perceived barriers, self-efficacy), and Cues to action).Based on our research we can get p-value of each variable that Sociodemographic has a significant relationship with Threat (p-value: 0.000). It means that Sociodemographic factors had a little bit relation with perceived severity and perceived susceptibility. Research showed that higher education tends to correlate with better awareness of harmful of smoking and health. Therefore, groups with secondary education may need more support and information. Education influences how people understand the harms of smoking. (Small et al., 2023). (Assari & Mistry, 2018)(James J. Heckman, 2018)Based on the SEM-PLS model of the Health Belief Model construction, it was found that Sociodemographic influences are the presence of other people who often visit the house and smoke and the frequency of exposure to cigarette smoke. According to Garrett et al., who examined how household smoking dynamics and socioeconomic factors contribute to smoking behavior disparities, people from lower socioeconomic backgrounds might be more vulnerable to the influence of their immediate social environment

Broader education such as health education based on previous research has an association with pregnant women's perceptions of the severity and susceptibility of pregnancy to themselves and their fetus. So it can be said that health education is something that pregnant women need to get in an effort to form health perceptions (Warri & George, 2020) and realize the health risks that will be obtained by pregnant women and their fetuses if exposed to cigarette smoke. (Wahabi et al., 2020) Majority of respondents who have low family income or below minimum wage of Samarinda (UMK) or lower than Rp 3,500,000. Some result showed that income influence behaviour. Based on Primary Health Riset 2013, smoking prevalence based on income, it's known that lowest income in 43.8% and highest income in 29.4%. It means that the majority of active smokers come from the lower middle class (Rohadatul & Surjaningum, n.d.) One of the socio-demographic factors is occupation. Occupation of pregnant woman can influence the perception of harmful smoking in some way. Work environment can also influence perception of pregnant woman about harmful of smoking. Pregnant woman who works in no smoking free more awareness about harmful of smoking.

In addition to affecting perception, the working status of pregnant women also affects other things, namely the courage of pregnant women to reprimand their husbands for smoking. A study shows the results that pregnant women who work or have their own income in the household, have the willingness or courage to reprimand others who smoke. (Olejniczak et al., 2021). Gravidity or the number of pregnancies of pregnant women is one of the sociodemographic factors that influence smoking. First-time pregnant women tend to take better care of their pregnancy because it is their first experience. This is consistent with research conducted in China, which found that there is a positive association between gravidity and smoking behaviour when the woman is pregnant (Xia et al., 2020). The presence of family members who smoke in the house causes exposure to cigarette smoke in pregnant women. Pregnant women will still be at risk of becoming passive smokers if there are family members who smoke in the house. Unfortunately, if family members who smoke such as parents, in-laws, or in-laws, pregnant women tend to lack the courage to reprimand them. This is due to a sense of reluctance. The results showed that socio demographics had a negative influence on expectation (benefits, barriers, and self-efficacy). This could be because pregnant women generally agree on the benefits they will get if their husbands do not smoke. They agree that if their husbands do not smoke, then they will be able to buy vitamins and nutritious food when they are pregnant. They also agree that if their husbands do not smoke then they will avoid the adverse effects of smoking.

The combination of sociodemographic factors, including the presence of other smokers and the frequency of exposure to cigarette smoke, has a significant impact on smoking habits and intentions to quit. By using the Health Belief Model to better understand these dynamics, public health campaigns that aim to reduce smoking prevalence and promote healthier lifestyle choices—particularly for pregnant women who are helping their spouse quit smoking—can be better informed. The second construction in the health belief model is Threat. The results showed that the Threat construction consisting of Perceived severity and perceived susceptibility had a significant positive effect on the participation of pregnant women. Perceived severity and perceived susceptibility that exist in pregnant women make pregnant women try to take action to protect themselves and their foetuses from the effects of smoking on health. This is in accordance with several related studies which show that a person's perception can influence a person's behaviour. (Taniguchi et al., 2023) Perceived danger and community social organization metrics combine to affect smoking habit. Smoking is twice as common among adults who perceive high levels of danger if they live in

neighborhoods with fewer supportive, helpful, and trustworthy social networks. (Denney et al., 2022) Other research on the influence of perceptions of severity and susceptibility on health behaviour shows that these two perceptions affect the behaviour of fathers in preventing stunting of their babies (Mar'Ah Has et al., 2022).

The next construction is expectation. Expectation consists of 3 indicators, namely barriers, benefits, and self-efficacy. Based on the results of the study, the expectation construct does not have a significant relationship with the participation of pregnant women. In terms of barriers, most pregnant women feel that they have considerable barriers to participating in either reprimanding their husbands when smoking, asking their husbands to reduce smoking or to ask their husbands to stop smoking. Regarding benefits, most pregnant women have the same perception of the benefits if their husbands stop smoking. Not limited to social determinants, they agreed that if they did not smoke, their health during pregnancy and the health of the foetus and baby would be better maintained if they avoided exposure to cigarette smoke. This is in line with previous research. That perceived benefits, perceived barriers, and self-efficacy are not related to a person's smoking behaviour. (Mar'Ah Has et al., 2022). Cues to action based on the results of the study had a positive and significant influence on the participation of pregnant women in the father's efforts to stop smoking. to participate, pregnant women need encouragement to act. previous research also discusses how cues to action affect a person's behavior. In a study entitled Predictors of Smoking among Secondary High School Boy Students Based on the Health Belief Model 2017, cues to action is an influential predictor of smoking behavior. Wallace-Williams, D. M., Tiu Wright, L., & Dandis, A. O. (2023) (Mohammadi et al., 2017)

Cues to action come from external encouragement can be in the form of negative experiences of other people during pregnancy who are exposed to cigarette smoke and internal experience can be in the form of pain experienced when exposed to cigarette smoke. One's impression of the risks associated with smoking can be greatly influenced by outside stimuli. For example, seeing how smoking harms expectant mothers or their unborn children can be a strong disincentive. According to research, people are more likely to form a strong dislike for tobacco usage if they are aware of the harmful health effects of smoking, especially during pregnancy. According to Ghanbarnejad et al., students who did not smoke viewed the health concerns associated with smoking as being more serious than those who did, indicating that outside observations can raise awareness and encourage behavior change (Ghanbarnejad et al., 2022) Additionally, Hodyl et al. emphasized that maternal smoking during pregnancy is associated with a number of negative perinatal outcomes, supporting the notion that smoking-related bad experiences can serve as a potent external cue for prospective smokers or those thinking about quitting (Hodyl et al., 2014).

Furthermore, research has demonstrated that smokers frequently report having more desires when they are exposed to stimuli related to smoking, such as visual cues and the bodily sensations connected to smoking (Gass, n.d.). Understanding the psychological processes underlying smoking behavior and quitting attempts requires an awareness of this internal cue sensitivity. Additionally, smokers may experience a complex environment due to the interplay between internal and exterior stimuli. (Rohmah et al., 2023) Conklin et. al colleagues observed that cravings and smoking behavior can be intensified by mixing contextual cues, such as being in a bar, with proximal smoking signals, such as witnessing someone smoke (Conklin et al., 2022). It also suggests that smoking motivation and behavior can be influenced by both kinds of cues working in concert. The interaction of these cues is especially important when it comes to quitting smoking, since both the unpleasant

experiences of others and the person's own distress can be strong inducements to make a change.

CONCLUSION

This study underlines how crucial it is for pregnant woman to take part in initiatives to reduce their husbands' smoking in order to prevent stunting. Pregnant women's participation was found to be significantly influenced by sociodemographic characteristics, perceived threat, and cues to action, according to the Health Belief Model approach. Particularly, it was demonstrated that pregnant women were more likely to engage in smoking cessation activities when they perceived the threat posed by smoking. However, expectations as assessed by perceived benefits, barriers, and self-efficacy did not significantly affect participation, indicating that while pregnant women are aware of the advantages of lowering their exposure to cigarette smoke, they are hampered by a number of obstacles. From these findings, it is recommended that public health programs concentrate more attention on education that can enhance awareness of the dangers of smoking, as well as providing help to overcome the challenges experienced by pregnant women in striving for a smoke-free environment. A more integrated approach incorporating education, social support, and community-based interventions is projected to boost pregnant women's participation in smoking cessation initiatives, hence having a favorable influence on mother and child health.

ACKNOWLEDGMENT

This research was conducted with a research fund grant at the Research and Community Service Program for Fiscal Year 2024, with the PPS-PTM Master Grant scheme organized by the Directorate General of Higher Education, Research and Technology, Ministry of Education, Culture, Research, with the PPS-PTM Master Grant scheme and Technology (Kemendikbudristek) with contract number 655/UN/17. L1/HK/2024.

REFERENCES

- Assari, S., & Mistry, R. (2018). Educational attainment and smoking status in a national sample of American adults; evidence for the blacks' diminished return. *International Journal of Environmental Research and Public Health*, 15(4). <https://doi.org/10.3390/ijerph15040763>
- Conklin, C. A., Coffman, B. A., McClernon, F. J., & Joyce, C. (2022). Smokers' Self-Report and Behavioral Reactivity to Combined Personal Smoking Cues (Proximal + Environment + People): A Pilot Study. *Brain Sciences*, 12(11). <https://doi.org/10.3390/brainsci12111547>
- Denney, J. T., Sharp, G., & Kimbro, R. T. (2022). Community social environments and cigarette smoking. *SSM - Population Health*, 19. <https://doi.org/10.1016/j.ssmph.2022.101167>
- Gass, J. C. and T. S. T. (n.d.). Assessment of the choice behavior under cued conditions (cbucc) paradigm as a measure of motivation to smoke under laboratory conditions.
- Ghanbarnejad, A., Homayuni, A., Hosseini, Z., & Madani, A. (2022). Smoking Behavior Among Students: Using Health Belief Model and Zero-Inflated Ordered Probit Model. *Tobacco and Health*, 1(2), 74–82. <https://doi.org/10.34172/thj.2022.12>
- Hodyl, N. A., Stark, M. J., Scheil, W., Grzeskowiak, L. E., & Clifton, V. L. (2014). Perinatal outcomes following maternal asthma and cigarette smoking during pregnancy. *European Respiratory Journal*, 43(3), 704–716. <https://doi.org/10.1183/09031936.00054913>
- James J. Heckman, J. E. H. and G. V. (2018). Returns to Education: The Causal Effects of Education on Earnings, Health, and Smoking. *Journal of Political Economy*, 197–246.
- Mar'Ah Has, E. M., Asmoro, C. P., & Gua, W. P. (2022). Factors Related to Father's

- Behavior in Preventing Childhood Stunting Based on Health Belief Model. *Jurnal Keperawatan Indonesia*, 25(2), 74–84. <https://doi.org/10.7454/jki.v25i2.847>
- Marmi, M., & Riyadi, S. (2025). The Influence of Adolescent Knowledge about Reproductive Health on the Intention to Avoid Smoking. *Indonesian Journal of Global Health Research*, 7(3), 1–10. <https://doi.org/10.37287/ijghr.v7i3.5632>
- Mohammadi, S., Ghajari, H., Valizade, R., Ghaderi, N., Yousefi, F., Taymoori, P., & Nouri, B. (2017). Predictors of smoking among the secondary high school boy students based on the health belief model. *International Journal of Preventive Medicine*, 8. https://doi.org/10.4103/ijpvm.IJPVM_264_16
- Olejniczak, D., Klimiuk, K., Religioni, U., Staniszewska, A., Panczyk, M., Nowacka, A., Mularczyk-Tomczewska, P., Krzych-Fałta, E., Korcala-Wichary, A., & Balwicki, Ł. (2021). Willingness to oppose smoking among pregnant women. *International Journal of Environmental Research and Public Health*, 18(21). <https://doi.org/10.3390/ijerph182111636>
- Rohadatul, D. S., & Surjaningum, E. R. (n.d.). Health Belief Model pada Perilaku Merokok Menurut Tingkat Pendapatan. <http://e-journal.unair.ac.id/index.php/BRPKM>
- Rohmah, N., Felix, M. S., Phukao, D., & Lamy, F. R. (2023). The Influence of Toxic Masculinity on the Smoking Behavior Among Young Indonesian Fathers. *Journal of Population and Social Studies*, 31, 652–671. <https://doi.org/10.25133/JPSSv312023.036>
- Taniguchi, C., Narisada, A., Ando, H., Hashimoto, A., Nakayama, A., Ito, M., Tanaka, H., & Suzuki, K. (2023). Smoking cessation behavior in patients with a diagnosis of a non-communicable disease: The impact of perceived disease severity of and susceptibility to the disease. *Tobacco Induced Diseases*, 21(10 October). <https://doi.org/10.18332/tid/170430>
- Wahabi, H. A., Massis, A., Fayed, A. A., & Esmail, S. A. (2020). Effectiveness of health education in reducing secondhand smoke exposure among pregnant women visiting the antenatal clinic in Saudi Arabia: A randomized controlled trial. *Indian Journal of Public Health*, 64(2), 102–108. https://doi.org/10.4103/ijph.IJPH_63_19
- Warri, D., & George, A. (2020). Perceptions of pregnant women of reasons for late initiation of antenatal care: A qualitative interview study. *BMC Pregnancy and Childbirth*, 20(1). <https://doi.org/10.1186/s12884-020-2746-0>
- Xia, W., Li, W. H. C., Cai, W., Song, P., Ho, L. L. K., Cheung, A. T., Luo, Y. H., Zeng, C., He, L., Gao, C., & Ho, K. Y. (2020). Association of smoking behavior among Chinese expectant fathers and smoking abstinence after their partner becomes pregnant: a cross-sectional study. *BMC Pregnancy and Childbirth*, 20(1), 1–11. <https://doi.org/10.1186/s12884-020-03148-8>