

Fwd: Environmental Health Insights - Decision on Manuscript ID EHI-23-0063

Resky Aulia Yusuf <reskyaulia@um.ac.id>
to umi.rizqiani, me

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From: Environmental Health Insights <onbehalf@manuscriptcentral.com>
Date: Fri, 5 May 2023 at 2:10 AM
Subject: Environmental Health Insights - Decision on Manuscript ID EHI-23-0063
To: <reskyaulia@um.ac.id>

04-May-2023

Dear Dr. Yusuf,

Manuscript ID EHI-23-0063 entitled "Cigarette smoke exposure and stunting among under-five children in rural and poor families in Indonesia" which you submitted to Environmental Health Insights, has been reviewed. The comments of the reviewer(s) are included at the bottom of this letter.

The reviewer(s) suggest some revisions to your manuscript before it can be considered for publication. Therefore, I invite you to respond to the reviewer(s) comments and revise your manuscript. In addition, it is advised for you to add a statement indicating the implication of your findings in the environmental health context.

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Once again, thank you for submitting your manuscript to Environmental Health Insights and I look forward to receiving your revision.

Sincerely,
Dr. Stephanie Richards
Environmental Health Insights
RICHARDS@ECU.EDU

Reviewer(s) Comments to Author:

Reviewer: 1

Comments to the Author
Very interesting research.

- 1) In the abstract, researchers can recommend solutions on how to reduce exposure to cigarette smoke in children.
- 2) In the background, further explained the difference between this study and previous research, especially research by Astuti et al. (2020) dan Sembra et al. (2007)
- 3) In the method section, it is better to explain the validity and reliability of the questionnaire used. What are the results of the validity and reliability test?
- 4) Researchers need to explain in more detail anthropometric measurements, especially HAZ assessments. Is it done by trained professionals, so that the measurement results are not biased.
- 5) The discussion needs to be more in-depth by using references to the latest research journals.

Reviewer: 2

Comments to the Author

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Reviewer(s) Comments to Author:

Reviewer: 1

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Reviewer: 2

Comments to the Author
Please review the manuscript according to the following notes:
The manuscript is full of grammatical errors. Authors should review them carefully and correct typos and grammatical errors.
After correction, the manuscript will be suitable for publication.

Reviewer: 3

Comments to the Author
This study aims at exploring the relationship between smoking behaviour at home and the stunting status of their children using the specific local data. The results are convincing following the national representative study conducted by Bella et al. (2022). However, in order to improve the quality of article, authors should explain deeply how sample are selected. Why sample is less than 400, a standard random sample without unknown the information of population. How authors stratified the sample? If information of sample selection is clear, then it would be potential for Publication.

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6:21PM (12 minutes ago)

Rezky Aulia Yusuf <rezkyauliayusuf@umi.ac.id>
to me

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From: Environmental Health Insights <orbehalfo@manuscriptcentral.com>
Date: Tue, 13 Jun 2023 at 20:12
Subject: Environmental Health Insights - Decision on Manuscript ID EHI-23-0063.R1
To: <rezkyauliayusuf@umi.ac.id>

13-Jun-2023

Dear Dr. Yusuf:

It is a pleasure to accept your manuscript entitled "Cigarette smoke exposure and stunting among under-five children in rural and poor families in Indonesia" in its current form for publication in Environmental Health Insights. The comments of the reviewer(s) who reviewed your manuscript are included at the foot of this letter.

Thank you for your fine contribution. On behalf of the Editors of Environmental Health Insights, we look forward to your continued contributions to the Journal.

Sincerely,
Dr. Stephanie Richards
Environmental Health Insights
RICHARDSS@ECU.EDU

Reviewer(s) Comments to Author:

Reviewer: 1

Comments to the Author
All improvements have been well revised.

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18:34
01/08/2023

Environmental Health Insights

Decision Letter (EHI-23-0063)

From: RICHARDSS@ECU.EDU

To: rezkyauliyusuf@umi.ac.id

CC:

Subject: Environmental Health Insights - Decision on Manuscript ID EHI-23-0063

Body: 04-May-2023

Dear Dr. Yusuf:

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Reviewer: 2

Comments to the Author

Please review the manuscript according to the following notes:

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After correction, the manuscript will be suitable for publication.

Reviewer: 3

Comments to the Author

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Date Sent: 04-May-2023

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RESPONSE TO REVIEWERS COMMENTS

REVIWERS COMMENTS	AUTHOR RESPONSE	PAGE
Reviewer: 1 Very interesting research.	Thank you so much	
1) In the abstract, researchers can recommend solutions on how to reduce exposure to cigarette smoke in children.	A solution or recommendation was added in the abstract.	Page 1 Line 17,18
2) In the background, further explained the difference between this study and previous research, especially research by Astuti et al. (2020) dan Semba et al. (2007)	Added a statement of the limitation of the studies	Page 2 Line 45-46
3) In the method section, it is better to explain the validity and reliability of the questionnaire used. What are the results of the validity and reliability test?	An explanation of the validity and reliability of the questionnaire used was added.	Page 3 Line 70-72
4) Researchers need to explain in more detail anthropometric measurements, especially HAZ assessments. Is it done by trained professionals, so that the measurement results are not biased.	Yes, the HAZ score was measured by some trained professionals that work in the health care center. The information added in the method.	Page 3 Line 76
5).The discussion needs to be more in-depth by using references to the latest research journals.	Revised and added some of the latest studies.	Page 5 115-125
Reviewer: 2		
The manuscript is full of grammatical errors. Authors should review them carefully and correct typos and grammatical errors. After correction, the manuscript will be suitable for publication.	We already corrected all typos and grammatical errors.	All part of the manuscript
Reviewer: 3 This study aims at exploring the relationship between smoking behaviour at home and the stunting status of their children using the specific local data. The results are convincing following the national representative study conducted by Bella et al. (2022).	Thank you	
Why sample is less than 400, a standard random sample without	We added the total population and explanation of the determination of sample.	Page 3 Lile 57-63

unknown the information of population. How authors stratified the sample? If information of sample selection is clear, then it would be potential for Publication		
Additional suggestion; In addition, it is advised for you to add a statement indicating the implication of your findings in the environmental health context.	A statement was added in the last paragraph of discussion.	Page 7 156-160

ABSTRACT

Cigarette smoke exposure in mothers and children is highly prevalent in Asia, especially among rural and poor families. Second-hand smoke exposure might affect the nutritional status of children. Despite the emerging double burden of malnutrition and the very high prevalence of smoking in Indonesia, few studies have examined the effects of parental smoking on children's nutritional status. This study aims to measure the relationship between family smoking behaviour and the occurrence of stunting in children under 5 years. This cross-sectional study used a **purposive sampling technique**, with 221 households with children aged 0–59 months from poor areas in Indonesia. Exposure to cigarette smoke is assessed using The Secondhand Smoke Exposure Scale questionnaire. The outcome measured is child stunting (height-for-age Z-score). The prevalence of stunting was estimated at 145 (65.6%). Children living with smoking parents were counted for 157 (71%), and most smoking exposure comes from fathers 147 (67.4%). The predictors of stunting in children under 5 years were a smoker father with (AOR 1.8; 95% CI 1.281–4.641), both parents are smokers increasing the risk of stunting with (COR 3.591; 95% CI 1.67–3.77), being exposed of smoke for more than 3 hours a day increase the risk of stunted children (COR 2.05; 95% CI 1.214– 3.629), and using traditional cigarette or kretek expand the risk of stunting (AOR 3.19; 95% CI 1.139–67.785). The findings demonstrate the negative impact of parental smoking on children's growth, reinforcing the importance of reducing smoking prevalence **by imposing a smoke-free home policy in the stunting prevention strategy.**

Keywords: Children; Smoke Exposure; Stunting; Rural Area; Poor Families

BACKGROUND

More than 8 million people die from tobacco-related causes yearly; 7 million of these fatalities are due to direct tobacco use, while around 1 million are from non-smokers exposed to secondhand smoke. Additionally, over 80% of the 1.3 billion tobacco smokers worldwide reside in low- and middle-income nations (World Health Organization, 2022). The market for tobacco products has steadily migrated from high-income to low-income nations, where the public is generally less aware of the health dangers of tobacco use and where anti-smoking laws are laxer (Gilmore et al., 2015; Lee et al., 2015).

Furthermore, tobacco use, or smoking, is a major health problem in Indonesia. It is reported by the Ministry of Health approximately 85.4% of active smokers smoke at home with family members, and more than 57% in a household have at least one smoker (Ministry of Health, 2023), thus directly increasing cigarette smoke exposure to both mother and child. Numerous research has focused on the relationship between smoking and adverse outcomes such as cancer, respiratory, and cardiovascular disease (Huttunen et al., 2011); however, the problem of smoking and its relationship to malnutrition and poverty have not been well characterised. Tobacco use may adversely affect malnutrition, especially among impoverished families in developing countries (Semba et al., 2007).

Moreover, stunting has now been identified as a major global health priority (De Onis & Branca, 2016). Reducing child stunting is the first of the six goals of the Global Nutrition Goals for 2025 and a vital indicator of the Zero Hunger Sustainable Development Goals 2. The prevalence of child stunting in Indonesia has remained high over the past decade, at around 29-30% nationwide (Ministry of Health, 2018). Although numerous research on the causes of stunting is usually reported to be associated with nutritional factors; however, some studies have started to find that other factors, such as exposure to cigarette smoke, might cause stunted children, and those studies are still limited. The previous study was conducted with small sample size and among the general population (Astuti et al., 2020; Semba et al., 2007). More comprehensive research on the causes of stunting is needed to provide appropriate

information to the public in determining efforts to promote health prevention of stunting and reduce the prevalence of paternal smokers and cigarette smoke exposure in mothers and children. Therefore, this study aimed to analyse the relationship between cigarette smoke exposure and stunting among children 0–59 months.

METHODS

This quantitative study used a cross-sectional approach conducted in rural and slum villages, in Enrekang City, South Sulawesi Province, Indonesia, in July–December 2022. The villages are particular locations (called locus stunting by the Ministry of Health, Republic Indonesia), indicating a high prevalence of stunting. Two villages in Enrekang reported a high prevalence of stunting and smokers, namely Latimojong Village, Buntu Batu District and Puserren Village. A total of 403 children were in these two villages. A total of 221 households with children 0–59 months of age participated by purposive sampling method. Based on the method, the sample with an estimated population of 403 children can be calculated as follows:

$$n = \frac{N}{1 + N(e)^2}$$

The researcher anticipates the dropout by adding 10% (e) of the total sample so that the minimum sample size is 80 children. In this study, 221 children exceeded the minimum sample. The inclusion criteria were families with children aged 0–59 months, living in the study area for a minimum of 2 years, having a health record book for mothers' and children's health, and parents willing to participate in this study. Children with a history of chronic cancer and nephrotic syndrome were excluded from the study.

The outcome variable in this study was stunting in children aged 0–59 months, while the explanatory variable was exposure to cigarette smoke. Exposure to cigarette smoke was assessed by the questionnaire from the modified Secondhand Smoke Exposure Scale (SHSES). This questionnaire was used

in some studies, and the validity and reliability have tested in 30 households with 0.935 of Cronbach's Alpha (Shah et al., 2019). The SHSES questionnaire consisted of a history of child exposure and the smoking characteristics of parents. The intended cigarette smoke exposure is a cigarette made from tobacco.

Furthermore, the anthropometric data assessment was done by calculating Z-scores and processed by the WHO's Anthro program to assess Z-scores. Z-score was assessed HAZ (height based on age) by trained professionals. The questionnaire also comprised parental identity, history of childbirth, family income, and history of infection. Secondary research data were obtained from maternal and child health books. Data was retrieved by conducting home visits following the time contract with the family.

The statistical tests used were Chi-Square, binary, or multinomial logistic regression for Crude Odds Ratio (COR) and multivariate logistic regression analysis to analyse Adjusted Odds Ratio (AOR) using SPSS 24.0. The results were validated by the expert in the Nutrition Program at the public health center (PHC) in the study area. The Ethics Committee of Universitas Muslim Indonesia and YW-UMI Hospital conducted the ethical review with No. register; UMI012210581.

RESULTS

The prevalence of stunting in children aged 0–59 months was estimated to occur in 145 (65.6%) children. Of all families, 80.5% live in poor and low income. Children living with smoking parents were counted for 157 (71%). The majority (147, 67.4%) of smoking exposure comes from the father and 54 (24.4%) from other relatives such as old brothers or neighbours. Children with prolonged exposure to cigarette smoke for more than 3 hours per day were counted for 210 (95%). Of all, 137 (62%) children get exposed to cigarettes inside the house, and most (134, 60.6%) smokers use filter cigarettes (**Table 1**).

Table 2 shows the relationship between exposure to cigarette smoke and stunting in children 0–59 months in rural and poor families in Indonesia. Family income, age, and the mother's body mass index were independent predictors for stunting in children under 5 years.

Table 3 describes the results of the logistic regression test (binary/multinomial and multivariate analysis) to find out the crude and adjusted odds ratio of smoking exposure towards stunting in under-five children. The predictors of stunting in children under 5 years were a smoker father with (AOR 1.8; 95% CI 1.281–4.641, $p < 0.001$), both parents are smokers increasing the risk of stunting with (COR 3.591; 95% CI 1.67–3.77, $p < 0.001$), being exposed of smoke for more than 3 hours a day increase the risk of stunted children (COR 2.05; 95% CI 1.214– 3.629, $p < 0.001$), and using traditional cigarette or kretek expand the risk of stunting (AOR 3.19; 95% CI 1.139–67.785, $p < 0.001$).

DISCUSSION

Characteristics of children and families related to stunting

The present study shows that the high prevalence of children living with smoking parents and paternal smoking is most of the smoking exposure, followed by relatives such as old brothers or neighbours. In addition, most children live with prolonged exposure to cigarette smoke, more than 3 hours per day inside the house. A recent study in Pakistan also found that 21.6% of children are exposed to parents who smoke, including 7% with mothers who smoke and 16.3% with fathers who smoke. This prevalence is higher in rural areas (Durre Nayab, Shabana Kishwar, 2022).

A high prevalence of smoking may contribute to an increase in stunting prevalence. This is because cigarettes or other tobacco products may account for many household expenditures among low-income families (Husain et al., 2018; Semba et al., 2007). Smoking exacerbates the effects of poverty, as expenditures for tobacco may divert household income from food, clothing, housing, health, and education. The amount of money spent on tobacco is especially problematic in low-income countries (Husain et al., 2018). Regarding nutrition, intake based on research using Indonesian cross-sectional household-level nationwide data of the 2018 National Socio-Economic Survey (SUSENAS) reported that cigarette consumption decreases household protein and energy intake. Additionally, a statistically significant correlation was found between a household's cigarette consumption and per capita protein

intake (Djutaharta et al., 2022). Furthermore, exposure to smoke during early childhood can lead to respiratory infections, such as pneumonia, and other respiratory conditions, impair growth and development. The delicate particulate matter (PM_{2.5}) and other toxic pollutants released from burning solid fuels can irritate the respiratory system and cause inflammation, leading to respiratory infections and chronic respiratory conditions. Children exposed to smoke from indoor air pollution may have increased rates of respiratory symptoms, decreased lung function, and a higher risk of developing pneumonia, which can contribute to stunting (Bălă et al., 2021; Ferrante et al., 2013).

Cigarette smoke exposure and increased risks of stunting

This present study shows that, in poor rural households in Indonesia, paternal smoking was associated with an increased risk of stunting in children. The risk was increasing when both parents were smokers. Similar findings are also reported in a national representative study using balanced panel data from the Indonesia Family Life Survey (IFLS) that children whose father has moderate or high smoking intensity tend to have a higher probability of stunting by 3.47 percentage points (Bella et al., 2022). These findings also reported in another study that children exposed to smoking by their parents are more likely to be stunted, especially when the mother smokes (Durre Nayab, Shabana Kishwar, 2022).

Another study in Indonesia also found that paternal smoking was most strongly associated with stunting. This may be due to the more chronic effect of a lower-quality diet in households where the father was a smoker (Astuti et al., 2020). This might be related to the proportion of weekly per capita household expenditures on quality foods such as eggs, fish, fruits, and vegetables were reduced in households where the father was a smoker (Djutaharta et al., 2022; Husain et al., 2018). The present study is consistent with observations from Bangladesh that in low-income families where the father smoked, a large proportion of weekly income was spent on tobacco, diverting money that might be spent on food (Semba et al., 2007). These findings also corroborate findings from the National Family Health Survey II in India of 92,486 households in which household tobacco use increased the risk of malnutrition among

children (Khan et al., 2020). Another explanation may relate to inhaling the parent's cigarette smoke directly affecting the child's growth and development. Tobacco smoke affects the absorption of nutrients in children, affecting their growth and development (Florescu et al., 2009).

Furthermore, this study found that exposure to smoke for more than 3 hours a day increases the risk of stunted children. Using traditional cigarettes or kretek expands the risk of stunting. Another study conducted in Surakarta on 123 children stated that the duration of exposure to cigarette smoke had a significant relationship in stunted children aged 25-59 months. Exposure to cigarette smoke for more than 3 hours per day increases the incidence of stunting by 10,316 times. Most stunted children in this study had smoking fathers with a smoking history of more than three years and a frequency of smoking more than three times a day (Astuti et al., 2020). The habit of smoking for most people in Indonesia is still considered normal behaviour and is part of social life and lifestyle. Most active smokers in rural areas ignore the risks and dangers of exposure to cigarette smoke to themselves and others (Hartono et al., 2019).

Based on the findings of this study, it suggests the urgency of imposing and implementing a smoke-free policy at the house. In addition, reducing paternal smoking at home can significantly decrease the level of secondhand smoke in the indoor environment, leading to improved air quality and a healthier living environment. This can have important implications for vulnerable populations such as infants, young children, and pregnant women (Centers for Disease Control and Prevention, 2021).

CONCLUSION

This study concludes that the high prevalence of children in rural and poor families living with smoking parents and paternal smokers is the majority of smoking exposure. In addition, most children lived with extended exposure to cigarette smoke, more than 3 hours per day inside the house. The independent predictors of stunting in children under 5 years were a smoker father, exposure to smoke for more than 3 hours a day and using traditional cigarettes or kretek. Significant tobacco control policies

should be promoted and implemented to reduce the potential long-term impact of maternal or paternal smoking on the future generation.

Consent for publication

Not applicable.

Availability of data and material

All data generated or analysed during this study are included in this published article and its supplementary information files, available from the corresponding author on reasonable request.

Competing interests

The authors declare no competing interests. This work was supported by Indonesia Tobacco Control Research Network 2022 (ITCRN 2022) by the Center for Sharia Economics and Business at Indonesia University and John Hopkins University, USA. The study sponsor did not influence the study's design, data analysis, interpretation of results, or the decision to submit the manuscript for publication.

Authors' contributions

NM, RAY, and ARR conceived the idea of the study and were responsible for the design of the study. NM, ARR, NM, NH, and AA were responsible for the data collection. RAY and AQ were responsible for analysing the data and producing the tables and graphs. RAY, AQ, and NM provided input into the data analysis and interpretation. RAY made the first complete paper draft, then circulated repeatedly to NM, ARR, NM, NH, AQ, and AA for critical revisions. All authors approved the final version of the manuscript.

Ethical standards disclosure

This study was conducted according to the guidelines in the Declaration of Helsinki. All procedures involved in this research study participants were approved by the Ethics Committee of Universitas Muslim

Indonesia and YW-UMI Hospital with No. register; UMI012210581. In addition, written informed consent was gained from all subjects.

Acknowledgment

We extend our most excellent thanks to the Enrekang District government (District and Village/Kelurahan) Enrekang District Health Office, the head of the Community Health Center, and Enrekeng community leaders.

Declaration of competing interest

All authors declare there is no conflict of interest in this study.

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Table 1. Characteristics of households with the stunted child among rural and poor families in Indonesia

Variable		Total n (%)
Stunting	Yes	145 (65.6)
	No	76 (34.4)
Exposure to Cigarette Smoke		
Smoker father	Yes	149 (67.4)
	No	72 (32.6)
Others smoker	Father/mother	157 (71.0)
	Uncle/aunty	6 (2.7)
	Grandfather/grandmother	4 (1.8)
	others	54 (24.4)
Duration of exposure	< 3 hours per day	210 (95.0)
	≥ 3 hours per day	11 (5.0)
Smoking inside house	Yes	137 (62.0)
	No	84 (38.0)
Kinds of cigarettes	Kretek/ Traditional	81 (36.6)
	filter cigarette	134 (60.6)
	Electric/vape	1 (0.5)
	non-filter cigarettes	5 (2.3)
Family Characteristics		
Family Income	≤ 2 million rupiah (low-income)	178 (80.5)
	> 2 million rupiahs (above-standard-income)	43(19.5)
Having Health Insurance (BPJS)	Yes	180 (81.4)
	No	41 (18.6)
Individual Factors		
Sex	Male	108 (48.9)
	Female	113 (51.1)
Age of children (months)	≤ 12	28 (12.7)
	13-24	65 (29.4)
	25-36	58 (26.2)
	>37	70 (31.7)
Maternal Factors		
Mothers age at pregnancy	No at-risk (20-30)	63 (28.5)
	At risk (<20 yr or >35)	158 (71.5)
Mother's BMI	Normal	38 (17.2)
	No' normal (malnutrition/obese)	183 (82.8)
Mother's Height	≥155 cm	79 (35.7)
	<155cm	142 (64.3)
History of Anemia	≥11g/dl	198 (89.6)

	<11g/dl	23 (10.4)
History of Abortus	Yes	34 (15.4)
	No	187 (84.6)
History of Infectious Disease	Yes	11 (5.0)
	No	210 (95.0)

Table 2. The relationship between exposure to cigarette smoke and stunting in children 0-59 months in rural and poor families in Indonesia

Variable		Stunting		Total f (%)	P-Value
		Yes (%)	No (%)		
Exposure to Cigarette Smoke					
Smoker father	Yes	95 (65.5)	54 (71.1)	149 (67.4)	0.446
	No	50 (34.5)	22 (28.9)	72 (32.6)	
Others smoker	Father/mother	98 (67.8)	59 (77.6)	157 (71)	0.22
	Uncle/aunty	4 (2.8)	2 (2.6)	6 (2.7)	
	Grandfather/grandmother	1 (0.7)	3 (3.9)	4 (1.8)	

	others	42 (29)	12 (15.8)	54 (24.4)	
Duration	≥3 h per day	139 (95.9)	71 (93.4)	210 (95.0)	0.428
	<3 h per day	6 (4.1)	5 (6.6)	11 (5.0)	
Smoking inside house	Yes	87 (60)	50 (65.8)	137 (62)	0.821
	No	58 (40)	26 (34.3)	84 (38)	
Kinds of cigarettes	Kretek/ Traditional	57 (39.3)	24 (31.6)	81 (36.6)	0.665
	Electric/vape	1 (0.7)	0 (0)	1 (0.5)	
	filter cigarette	86 (59.3)	48 (63.2)	134 (60.6)	
	non-filter cigarettes	1 (0.7)	4 (5.3)	5 (2.3)	
Family Characteristics					
Family Income	≤ 2 million rupiah (above standards income)	117 (80.7)	61 (80.3)	178 (80.5)	0.005*
	> 2 million rupiahs (low-income)	28 (19.3)	15 (19.7)	43(19.5)	
Having Health Insurance	Yes	118 (81.4)	62 (81.5)	180 (81.4)	0.716
	No	27 (18.6)	14 (18.4)	41 (18.6)	
Individual Factors					
Sex	Male	70 (48.3)	38 (50)	108 (48.9)	0.808
	Female	75 (51.7)	38 (50)	113 (51.1)	
Age (months)	≤ 12	12 (8.3)	16 (21.1)	28 (12.7)	0.031*
	13-24	42 (29)	23 (30.3)	65 (29.4)	
	25-36	39 (26.9)	19 (25.0)	58 (26.2)	
	>37	52 (35.9)	18 (23.7)	70 (31.7)	
Maternal Factors					
Mother's age at pregnancy	No at-risk (20-30)	42 (29)	21 (27.6)	63 (28.5)	0.79
	At risk (<20 yr or >35)	103 (71.0)	55 (72.4)	158 (71.5)	
Mother's BMI	Normal	20 (13.8)	18 (23.7)	38 (17.2)	0.028*
	Not normal (malnutrition/obese)	125 (86.2)	58 (76.3)	183 (82.8)	
Mother's Height	≥155 cm	50 (34.5)	29 (38.2)	79 (35.7)	0.101
	<155cm	95 (65.5)	47 (61.8)	142 (64.3)	
History of Anemia	≥11g/dl	134 (92.4)	64 (84.2)	198 (89.6)	0.058
	<11g/dl	11 (7.6)	12 (15.8)	23 (10.4)	
History of Abortus	Yes	23 (15.9)	11 (14.5)	34 (15.4)	0.066
	No	122 (84.1)	65 (85.5)	187 (84.6)	
History of Infectious Disease	Yes	8 (5.5)	3 (3.9)	11 (5)	0.234
	No	137 (94.5)	73 (96.1)	210 (95)	

Table 3. Multivariate models for smoking exposure and other risk factors for stunted children among rural and poor families in Indonesia

Variable		COR (95% CI)	AOR (95% CI)
Exposure to Cigarette Smoke			
Smoker father	Yes	1.29 (0.71-2.36)	1.8 (1.281-4.641)*
Others smoker	Father/mother	3.59 (1.672-3.773)*	1.06 (0.111-11.365)
	Uncle/aunty	1.3 (0.911-1.599)	1.75 (0.917-6.770)
	Grandfather/grandmother	1.5 (0.192-3.508)	1.43 (0.174-11.756)
	others	1.23 (0.679-1.788)	1.56(0.204-3.030)
Duration	≥3 h per day	1.61 (0.181-2.078)	2.05(1.214-3.629)*
Smoking inside house	Yes	1.282 (0.719-2.287)	1.41 (0.323-6.174)
Kinds of cigarettes	Kretek/ Traditional	9.8 (1.031-93.182) *	3.19 (1.139-67.785)*
	Electric/vape	8 (0.658-97.311)	0.28 (0.021-3.394)
	filter cigarette	1.00	1.00
	non-filter cigarettes	7.1 (0.779-65.968)	1.76 (0.469-6.174)
Family Characteristics			
Family Income	≤ 2 million rupiah (above standard income)	1.028 (0.511-2.068)	1.895 (0.384-2.083)
Having Health Insurance	Yes	0.98 (0.483-2.107)	1.118 (0.468-4.064)

		Individual Factors	
Sex	Male	0.933 (0.536-1.626)	0.885(0.471-2.668)
Age (months)	≤ 12	1.00	1.00
	13-24	0.260 (0.103-0.652)	2.751 (0.117-6.770)
	25-36	0.632 (0.302-1.323)	1.431 (0.174-11.756)
	>37	0.711 (0.330-1.530)	3.559 (0.204-62.030)
		Maternal Factors	
Mother's age at pregnancy	No at-risk (20-30)	0.984 (0.717-1.351)	1.083 (0.755-1.553)
Mother's Body Mass Index	Normal	0.940 (0.955-3.951)	2.090 (0.925-4.722)
Mother's Height	≥155 cm	0.172 (0.659-2.085)	0.811 (0.409-1.607)
History of Anemia	≥11g/dl	0.438 (0.183-1.046)	0.265 (0.192-1.762)
History of Abortus	Yes	1.114 (0.511-2.429)	1.158 (0.224-2.686)
History of Infectious Disease	Yes	1.421 (0.366-5.519)	1.635 (0.374-7.152)

* p-value < 0.001; CI – confidence interval; AOR – adjusted odds ratio; COR – crude odds ratio; ref – reference category.

Environmental Health Insights

Decision Letter (EHI-23-0063.R1)**From:** RICHARDSS@ECU.EDU**To:** rezkyauliyusuf@umi.ac.id**CC:****Subject:** Environmental Health Insights - Decision on Manuscript ID EHI-23-0063.R1**Body:** 13-Jun-2023

Dear Dr. yusuf:

It is a pleasure to accept your manuscript entitled "Cigarette smoke exposure and stunting among under-five children in rural and poor families in Indonesia" in its current form for publication in Environmental Health Insights. The comments of the reviewer(s) who reviewed your manuscript are included at the foot of this letter.

Thank you for your fine contribution. On behalf of the Editors of Environmental Health Insights, we look forward to your continued contributions to the Journal.

Sincerely,
Dr. Stephanie Richards
Environmental Health Insights
RICHARDSS@ECU.EDU

Reviewer(s)' Comments to Author:

Reviewer: 1

Comments to the Author
All improvements have been well revised.

Date Sent: 13-Jun-2023 Close Window

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