Exploring Stunting Risk Factors in Palu City: Maternal Education, Occupation, Caesarean Delivery, and Child's History of Illness

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Abstract. This study's objective is to examine the factors that increase the risk of stunting in children under two in Palu City with analytical cross-sectional, targeting children aged 6 to 23 months of 270 infants and children under two years selected through cluster simple random sampling and took place between March and July 2023. The investigation examined predictors of stunting, including mother's age, mother's education, maternal occupation, child's gender, types of delivery, child's age, drinking water source, family toilet ownership, early initiation of breastfeeding, length at birth, birth weight, breastfeeding (during research), number of children, utilization of health facilities, complementary feeding, stimulation development, the family smokes, history of illness, history of acute respiratory infection, history of diarrhea, pneumonia, measles, Palu Maseha Program. Data were gathered using the Cobocollect form, and height-for-age Z-scores were calculated utilizing WHO Anthro 2005 guidelines and the data analysis included univariate in bivariate and multivariate analyses. The study findings, among infants and children under the age of two in Palu City, stunting was most commonly associated with maternal education (AOR=2.3, 95% CI: 1.1-4.8), maternal occupation (AOR=1.9, 95% CI: 1.1-3.4), cesarean delivery (AOR=2.3, 95% CI: 1.3-4.2), and history of illness (AOR=4.1, 95% CI: 1.3-12.9). 30.0% of infants and toddlers in Palu City under the age of two suffered from stunting in 2023. Increased maternal education, assistance for working women, normal delivery practices, and the implementation of initiatives for childhood illness prevention and treatment are suggested strategies to combat and reduce cases of stunting in Palu City.

Keywords: Risk Factors, Stunting, Palu City, Indonesia

1   Introduction

An anthropometric measurement of a child's height for age with a Z-score -2 SD WHO criteria is referred to as stunting. [2, 4, 13, 21, 27]. J. C. Waterlow created the diagnostic category of stunting in 1973 to evaluate a child's nutritional state. Typically beginning

in early life, stunting is a long-term obstacle to linear growth and is difficult to overcome for further growth [12]. The causes of stunting in children are multifactorial. Low maternal education, aging children, male gender, poor households, duration of breastfeeding, low birth weight, maternal age 20 years, inadequate drinking water sources, low maternal BMI 18.5, episodes of diarrhea, education, and father's residence in rural areas are the factors most consistently linked to stunting[32]. Stunting in under-fives is currently the focus of research worldwide [5, 11, 16–18, 20, 31].

According to studies, stunting affects 33.7% of Indonesia's population as a whole. Twenty prospective antenatal care services, characteristics of the mother and father, features of the child, and family and housing variables are all grouped as potential predictors of stunting. Stunting rates significantly increased among children who lived in homes with three or more young children, five or more occupants, mothers who participated in fewer rather than four prenatal appointments over pregnancy, and boys between the ages of 12 and 23 months who were born weighing less than 2500 g [33]. Stunting in Indonesia is caused by a number of factors, including not exclusive breastfeeding for the first six months, low household socioeconomic status, premature delivery, tiny birth, restricted maternal height, a lack of education, impoverished latrines, neglected drinking water, limited opportunities for medical services, and residing in rural areas [7]. Low birth weight, failing to wash one's hands, and lacking access to a latrine are risk factors for stunting in Central Sula-wesi, according to provincial studies [24]. According to district-level studies, Palu City has a 43.8% prevalence of stunting[26]. Low birth weight, children between the ages of 12 and 23, mothers who are shorter than 150 cm, caregivers who don't wash their hands with soap, and inadequate basic vaccines were shown to be risk factors for stunting, according to research on determinants at the subdistrict level [23]. Lack of awareness of stunting, failure to exclusively breastfeed, errors made with complementary feeding, low family income, improper use of posyandu, unsanitary environmental conditions, taboo cultural foods for expectant mothers, nursing mothers, and stunting is caused by a number of conditions, including children under the age of two. [8].

Among Indonesia, the frequency of stunting among children under five fell from 37.2% in 2013 to 30.8% in 2018 [15]. Meanwhile in Central Sulawesi the prevalence of stunting under two years old in 2007, 2011 and 2016 also decreased, namely 32.3%, 31.5% and 26.0% respectively. In the last 9 years there has been a decrease of 6.2% or an average of 0.6% per year[25]. It has been discovered after a comprehensive search using the "publish or perish" program that no prior research has been done on the variables influencing and the trends in the frequency of stunting among children under five in Palu City. In addition, Palu City in 2023 has become a focus center for occurrences of stunting in Central Sulawesi. The findings in this study are anticipated to offer suggestions for further research into Palu City's stunting prevention measures at the academic level. The foundation for starting this research was created by the unknown risk factors and the changing prevalence patterns of stunting among children under two in Palu City. Although numerous studies have been carried out in various locations, it is impossible to assess the frequency and causes of stunting [6]. This study's objective is to examine the factors that increase the risk of stunting in children under two in Palu City.

2   Method

Analytical research using a cross-sectional study design constitutes this type of study. The study was conducted in Palu City, which had a high rate of stunting among the 295 young children in the sample. The respondent is a mother's childrens clown. Data collection was carried out in March-July 2023. Data 304, 3 blank data, Z Score anthropometric data + 6SD 12 data. 19 data is data of children more than 24 months. The data analyzed were 270 data. The responsible data technical person verifies the accuracy and completeness of the data. The dependent variable are namely stunting status, while the independent variable, namely the Mother's age, Mother's education, Maternal occupation, Child's gender, Types of delivery, Child's age, Drinking water source, Family Toilet Ownership, Early Initiation of Breastfeeding, Length at Birth, Birth Weight, Breastfeeding (during research), Number of children, Utilization of health facilities, Complementary Feeding, Stimulation Development, The family smokes, History of illness, History of acute respiratory infection, History of diarrhea, pneumonia, measles, Palu Maseha Program. The Length Measuring Board (LMB) was used to measure body length, and the respondent's child's birth certificate or MCH book was used to determine age. Additional information gathered by answering a questionnaire.

   Data analysis was done with SPSS version 22.00. The WHO-Antro 2005 application was employed to determine the Z-Score Length for Age. Data analysis was performed out in three steps. The first is univariate analysis to explain the occurrence distribution for every factor. Second, the odds ratio (OR), or the risk proportion associated with the stunting group and the control group, is subsequently determined using a bivariate analysis between both dependent and independent variables using an acceptable chi-square test p0.05.. Backward logistic regression was employed for the three multivariate analyses. Risk Factor Research and Stunting Prevalence Trends for Children Under Five in Palu City Were Disseminated to Palu City Government Officials on February 6, 2023. No. 0015/KEPK-KPK/I/2023, an ethical approval issued by KEPK Poltekkes Kemenkes Palu. A study certificate with the identifier 070/4006/Bid.III-BKBPD/2023 was granted by the National Unification and Regional Affairs Agency of the Central Sulawesi Regional Authority.

3   Result

3.1   Sample description

Based on data analysis, the following findings were obtained: There were 12 children under two years who had mothers under 20 years of age (4.4%). Maternal Education, A total of 34 mothers (12.6%) had less than 9 years of education. Mother's Occupation, 104 mothers (38.5%) worked. There were 126 male children under two years (46.7%) and 144 female children under two years (53.3%).

   A total of 186 children under two years 84 children under two years (31.1%) via Sectio Secarea surgery. The majority of children under two years (94.1%) are aged between 7 and 23 months, while there are 16 children under two years aged 0-6 months

(5.9%). Drinking Water Source showed that most families (99.6%) have used improved drinking water sources. Ownership of a Family Toilet showed a total of 258 families (95.6%) have a family latrine, while 12 families (4.4%) do not have a family latrine. Early Breastfeeding Initiation showed a total of 150 children under two years (55.6%) received early breastfeeding initiation, while 120 children under two years (44.4%) did not.

The majority of infants under the age of two (70.7%) were delivered with a body length under 48 cm, while 79 infants under the age of two (29.5%) were delivered with a body length above 48 cm. 42 newborns under the age of two were born underweight, accounting up 15.6% of the total 228 children under two who were delivered of a standard weight.. The majority of infants under two (64.4%) received breast milk, while 95 infants under two (35.2%) did not. Number of Children showed a total of 233 families (86.3%) had three or fewer children, while 37 families (13.7%) had more than three children. Utilization of Health Facilities showed the majority of families (99.3%) utilize health facilities. Provision of PMT showed a total of 70 children under two years (25.9%) received PMT, while 200 children under two years (74.1%) did not receive it. Stimulation Development showed a total of 206 children under two years (76.3%) received stimulation, while 64 children under two years (23.7%) did not get it. Smoking Habit in the Family showed a total of 186 families (68.9%) had a smoking habit, while 84 families (31.1%) did not smoke. History of illness showed a total of 240 children under two years (88.9%) had experienced illness, while 30 children under two years (11.1%) had never experienced illness.

History of ARI showed that the majority of children under two years (84.1%) had never experienced ARI, while 43 children under two years (15.9%) had experienced ARI. History of Diarrhea showed the majority of children under two years (92.6%) had never experienced diarrhea, while 20 children under two years (7.4%) had experienced diarrhea. History of Pneumonia showed the majority of children under two years (99.6%) had never experienced pneumonia, while only 1 toddler (0.4%) had experienced pneumonia. History of Measles showed the majority of children under two years (98.5%) have never experienced measles, while only 4 children under two years (1.5%) have ever experienced measles.

Palu Maseha Program showed a total of 73 families (27.0%) participated in the Palu Maseha program, while 197 families (73.0%) did not participate. Length for age of Nutritional Status showed a total of 181 children under two years (67.0%) had normal nutritional status, while 89 children under two years (33.0%) experienced stunting (Table 1).

3.2   Relationship Between Variables

Based on the mother's age, there is not a significant distinction in the nutritional condition of children under the age of five (nor-mal or stunted). moms under the age of 20 and moms above the age of 20 both had nearly the same rate of stunted children under the age of two (33.3%). Mother's Education revealed that the mother's education level had a substantial impact on the nutritional status of children under two years old. Stunting harms more children under the age of five whose mothers have less than 9 years of

education (52.9%) than do moms with 9 years or more of education (30.1%). Children under two whose mothers worked exhibited a tendency to have a reduced prevalence of stunting (26.0%) compared to children under two whose mothers did not work (37.3%), even if this trend did not reach a strong level of significance. Children's Gender revealed that there is no appreciable sex-based difference in the nutritional status of children under two years old. Boys are more likely to be stunted than girls are (37.3% versus 29.2%). Based on the method of delivery, there are clear differences in the nutritional condition of children under two years old. Stunting is more common among under-fives born by Sectio Secarea (41.7%) than in those born normally (29.0%).

Age of Child data indicate that, although it did not reach a strong level of significance, there was a trend toward a reduced prevalence of stunting (12.5%) among infants aged 0 to 6 months compared to those aged 7 to 23 months (34.3%). Based on the family's source of drinking water, Source of Drinking Water revealed there is no appreciable variation in the nutritional health of children under two years old. According to study, having ownership of a household latrine has no discernible impact on the nutritional requirements of children less the age of two. According to Early Initiation of Breastfeeding, there are no appreciable differences in the nutritional health of children under the age of two. Birth Length revealed, however it did not reach a strong level of significance, that stunting was more common among under-fives whose body length was 48 cm (29.8%) than among those whose body length was 48 cm (40.5%). Age at Birth Based on birth weight, there is no apparent disparity between children under the age of two in their nutritional health. There was no apparent disparity in the nutritional status of children under two years old based on breastfeeding at the time of the study, according to breastfeeding (at the time). Based on the number of children in the family, Number of Children revealed there is no appreciable difference in the nutritional quality of children under two years old. Based on the use of health facilities, it was discovered that there is no appreciable difference in the nutritional status of children under the age of two.

There is a noticeable difference in the nutritional condition of children less the age of two depending on the provision of PMT, according to the provision of PMT (Additional Feeding). In comparison to children who do not receive PMT (50.0%), children under two who receive PMT had a decreased prevalence of stunting (27.0%). According to Stimulation Development, there is no discernible difference between children under the age of two in terms of their nutritional health. Based on family smoking practices, it was discovered that there is no appreciable change in the nutritional health of children under the age of two. History of Illness revealed that children under two years old's nutritional condition varies significantly depending on their medical history. Stunting is more common in children under two who have a medical history (35.4%) than it is in children without a medical history (13.3%).

There was no discernible variation in the nutritional status of children under the age of two based on a history of ARI (Acute Respiratory Infection) illness, according to studies on the subject. The prevalence of stunting was determined to be higher in children under two years old who had a history of diarrhea (50.0%) compared to children without a history of diarrhea (31.6%), even if this finding did not reach a strong level of significance. Based on a history of pneumonia, it was discovered that there is no

appreciable variation in the nutritional health of children under the age of two. History of Measles revealed that, regardless of a child's prior exposure to the disease, there was no discernible variation in the nutritional health of children under the age of two. The Palu Maseha Program revealed that participation in the program had no discernible impact on the nutritional status of children under the age of two (Table 2).

Results of Multivariate Data Analysis of Trends in Stunting Prevalence and Risk Factors for Baduta Children in Palu City are determined by the mother's age, profession, method of delivery, and medical history. The level of education of the mother has a considerable impact on the occurrence of stunting in children under two years old. The risk of stunting is 2.3 times higher for Baduta children whose mothers have less than 9 years of school than it is for children under the age of 5 whose mothers have 9 years or more of education. The range of the Adjusted Odds Ratio (AOR)'s 95% confidence interval is 1.1 to 4.8.

According to Mother's Occupation, there is a considerable difference in the prevalence of stunting in kids under two depending on the mother's profession. Children less than five with mothers who working have a 1.9 times lower risk of stunting than do those whose mothers are unemployed. The AOR's 95% confidence interval was between 1.1 and 3.4.

The prevalence of stunting in children under the age of two varies significantly depending on the type of delivery, according to Type of Delivery. Compared to children born naturally, children under two who undergo a Sectio Secarea procedure had a 2.3 times greater risk of stunting. The range of the AOR's 95% confidence interval was 1.3 to 4.2.

According to the history of illness, there is a considerable difference in the prevalence of stunting in children under two years old. toddlers under the age of two who have a history of illness are 4.1 times more likely to experience stunting than toddlers without such a history. The range of the AOR's 95% confidence interval was 1.3 to 12.9. Palu Maseha Program revealed a trend that participation in the Palu Maseha Program was associated with a decreased risk of stunting in children under two, even if it did not reach a strong significance level (p=0.075). Children under five who do not participate in the program have a 1.8 times higher chance of developing stunting than children under five who do. According to Table 3, the 95% confidence interval for AOR varied from 0.9 to 3.3 (Table 3).

Table 1. Characteristics of Respondents

Variable	N	%
Mother's age		
<20 years	12	4,4
≥20	258	95,6
Mother's education		
<9 years	34	12,6
≥9 years	236	87,4
Maternal occupation		
Work	104	38,5

Variable	N	%
Doesn't work	166	61,5
Child's gender		
Man	126	46,7
Woman	144	53,3
Types of delivery		
Normal	186	68,9
Sectio Secarea	84	31,1
Child's age		
0-6 Months	16	5,9
7-23 Months	254	94,1
Drinking water source		
Not Improved	1	0,4
Improved	269	99,6
Family Toilet Ownership		
No	12	4,4
Yes	258	95,6
Early Initiation of Breastfeeding		
No	120	44,4
Yes	150	55,6
Body Length at Birth		
<48 cm	79	29,3
≥48 cm	191	70,7
Birth Weight		
Low	42	15,6
Normal	228	84,4
Breastfeeding (during research)		
No	95	35,2
Yes	174	64,4
Number of children		
>3 children	37	13,7
<=3 children	233	86,3
Utilization of health facilities		
No	2	0,7
Yes	268	99,3
Complementery Feeding		
No	200	74,1

Variable	N	%
Yes	70	25,9
Stimulation Development		
No	64	23,7
Yes	206	76,3
The family smokes		
No	84	31,1
Yes	186	68,9
History of illness		
No	30	11,1
Yes	240	88,9
History of acute respiratory infection		
No	227	84,1
Yes	43	15,9
History of diarrhea		
No	250	92,6
Yes	20	7,4
History of pneumonia		
No	269	99,6
Yes	1	0,4
History of measles		
No	266	98,5
Yes	4	1,5
Palu Maseha Program		
Yes	73	27,0
No	197	73,0
Nutritional Status (Length for age)		
Normal	181	67,0
Stunting	89	33,0

Table 2. Bivariate Analysis of Research on Risk Factors and Prevalence Trends of Stunting Incidents in Under-Dose Children in Palu City

Varible	Nutritional Status				P-value
	Normal		Stunting		
	n (181)	%	n (89)	%	
Mother's age					
<20 years	8	66,7	4	33,3	0,978
≥20	173	67,1	85	32,9	
Mother's education					

| Varible | Nutritional Status | | | | P-value |
| | Normal | | Stunting | | |
	n (181)	%	n (89)	%	
<9 years	16	47,1	18	52,9	0,008
≥9 years	165	69,9	71	30,1	
Maternal occupation					
Work	77	74,0	27	26,0	0,053
Doesn't work	104	62,7	62	37,3	
Gender of child					
Man	79	62,7	47	37,3	0,156
Woman	102	70,8	42	29,2	
Type of delivery					
Normal	132	71,0	54	29,0	0,041
Sectio Secarea	49	58,3	35	41,7	
Children's age					
0-6 month	14	87,5	2	12,5	0,073
7-23 month	167	65,7	87	34,3	
Source of drinking water					
Not Improved	1	100,0	0	0,0	0,482
Improved	180	66,9	89	33,1	
Family Latrine Ownership					
No	7	58,3	5	41,7	0,512
Yes	174	67,4	84	32,6	
Early Breastfeeding Initiation					
No	80	66,7	40	33,3	0,908
Yes	101	67,3	49	32,7	
Length of birth					
<48 cm	47	59,5	32	40,5	0,090
≥48 cm	134	70,2	57	29,8	
Weight of birth					
Low	26	61,9	16	38,1	0,441
Normal	155	68,0	73	32,0	
Breastfeeding (at the time of the study)					
No	65	68,4	30	31,6	0,768

Varible	Nutritional Status				P-value
	Normal		Stunting		
	n (181)	%	n (89)	%	
Yes	116	66,7	58	33,3	
Number of children					
>3 children	27	73,0	10	27,0	0,408
<=3 children	154	66,1	79	33,9	
Utilization of Health facilities					
No	1	50,0	1	50,0	0,607
Yes	180	67,2	88	32,8	
Complementery Feeding					
No	146	73,0	54	27,0	<0,001
Yes	35	50,0	35	50,0	
Stimulation Development					
No	45	70,3	19	29,7	0,523
Yes	136	66,0	70	34,0	
The family smokes					
No	55	65,5	29	34,5	0,714
Yes	126	67,7	60	32,3	
History of illness					
No	26	86,7	4	13,3	0,015
Yes	155	64,6	85	35,4	
History of Acute Respiratory Infection					
No	152	67,0	75	33,0	0,951
Yes	29	67,4	14	32,6	
Diarrhea history					
No	171	68,4	79	31,6	0,092
Yes	10	50,0	10	50,0	
History of pneumonia					
No	180	66,9	89	33,1	0,482
Yes	1	100,0	0	0,0	
History of measles					
No	179	67,3	87	32,7	0,465
Yes	2	50,0	2	50,0	

Varible	Nutritional Status				P-value
	Normal		Stunting		
	n (181)	%	n (89)	%	
Palu Maseha Program					
Yes	45	61,6	28	38,4	0,251
No	136	69,0	61	31,0	

Table 3. Multivariate Analysis of Research on Risk Factors and Prevalence Trends of Stunting Incidents in Under-Dose Children in Palu City

Variable	P-value	AOR	95% CI	
			lower	upper
Mother's education				
≥9 years		reff		
<9 years	0,035	2,3	1,1	4,8
Maternal occupation				
Work		reff		
Doesn't work	0,027	1,9	1,1	3,4
Type of delivery				
Normal		reff		
Sectio Secarea	0,005	2,3	1,3	4,2
History of ilness				
No		reff		
Yes	0,015	4,1	1,3	12,9
Palu Maseha Program				
No		reff		
Yes	0,075	1,8	0,9	3,3

4   Discussion

According to biavariate study, low mother education, the use of sectio secarea births, and a history of illness are the risk variables connected concerning the frequency of stunting in children less than two in Palu City. Stunting seems to be less common in children who receive ample-mentary feeding (PMT), which may be a protective factor. According to the research, maternal education (AOR=2.3, 95% CI: 1.1-4.8), maternal occupation (AOR=1.9, 95% CI: 1.1-3.4), cesarean delivery (AOR=2.3, 95% CI: 1.3-4.2), and past medical history (AOR=4.1, 95% CI: 1.3-12.9) were risk factors for stunting among children under two years old in Palu City.

The findings of this study are pertinent to a study by Kasmita et al. (2023), which demonstrates that stunting prevention efforts include education [14]. The Lestari et al. (2023) study also discovered that pingit education can boost prospective brides' knowledge, attitudes, and abilities linked to nutrition and health in order to decrease stunting [19]. Utilizing leaflets is one technique to improve the nutritional understanding of new mothers [1]. Another study by Mutoharoh et al. (2023) found a connection between mothers' nutritional health and milk production following a Caesarean section [22]. Because deliveries involving Sectio Secarea frequently result in mothers having difficulty breastfeeding due to the condition of surgical wounds in the stomach that impede the breastfeeding process, affecting the production and use of breast milk, this can increase the likelihood that postnatal mothers will not do IMD and exclusive breast-feeding. According to Februanti's study from 2019, there is a connection between post-SC maternal parity and exclusive breastfeeding [9]. Oxytocin massage for postpartum women with Sectio To increase the hormones oxytocin and prolactin, which are in-volved in the production and release of breast milk, secarea is used [10].

Stunting incidence may also be impacted by a child's history of illness. According to a study by Yunita and Mega (2022), children under two years old between the ages of 24 and 36 months who have a history of infectious infections are significantly more likely to have stunting. According to other studies, there is a connection between a child's history of being exclusively breastfed, their history of infection, and their dietary patterns [28]. The findings of this analysis can be used as the foundation for developing treatments and policies that are more successful in lowering the issue of stunting in children under two in this region. Additionally, additional research must be done in order to better understand the causes of nutritional issues in Palu City's under-two-year-old children.

According to multivariate data analysis, low maternal education, women without jobs, the use of the Sec-tio Secarea delivery method, and a child's medical history are some of the important risk variables connected to the frequency of stunting in children under two years old in Palu City. Although this result has not yet attained a strong degree of significance, participation in the Palu Maseha Program appears to be associated with a decreased risk of stunting. The findings of this analysis can be used as the foundation for creating interventions and policies that are more successful in lowering the issue of stunting in children under two in this region. The issue of stunting may be addressed, and programs that concentrate on these risk factors can enhance the health of children under five in Palu City.

The findings that are relevant to the health transformation program of the Indonesian Ministry of Health and the Palu City government program are that from the aspect of mother's education. Stunting is more common among children under the age of five whose mothers have less than 9 years of education than it is among children whose moms have 9 years or more of education. Stunting is 2.3 times more likely to occur in kids whose moms have less education. Children under two whose moms do not work have a higher prevalence of stunting than children under two whose mothers do work, according to the mother's occupation. The findings of this study, which are consistent with earlier studies, show that socioeconomic circumstances and the mother's educational attainment have a significant impact on the incidence of stunting [3, 30]. Results

Stunting is 1.9 times more likely to occur in children whose moms do not work. Under-five children born via sectio secarea have a higher rate of stunting than those born regularly, according to Type of Childbirth research. Stunting is 2.3 times more likely to occur in children whose mothers previously underwent a Sectio Secarea birth. History of Illness: Stunting is more common in children under the age of two who have a history of illness than it is in children under the age of two who do not. Stunting is 4.1 times more likely to occur in children who have a medical history.

Participation in the Palu Maseha Program has been linked to a lower incidence of stunting in young children, according to research from the program. Stunting risks are 1.8 times higher for kids who don't participate in the program. The findings of this study suggest that there are a number of variables that may contribute to the incidence of stunting in children under the age of two in Palu City. Significant risk factors for stunting in children include maternal education, occupation, method of delivery, history of illness, and participation in the Palu Maseha Program. These results are pertinent to the health transformation initiative and can help the Indonesian Ministry of Health and the Palu City government create and put into practice more successful health interventions. Stunting prevention must be carried out by continuing to pay attention to certain factors, including intensively promoting subject health and welfare, identifying solutions to health issues, reinforcing targets and empowering cadres, providing health services, information, and referral facilities [29]. These limitations should be considered when evaluating and using the results of the study, which offers insightful information about risk factors connected to stunting in Palu City children under the age of two. Future research should consider more robust study designs and address these limitations to provide a more comprehensive understanding of the factors contributing to childhood stunting and effective intervention strategies. The research findings provide a valuable foundation for evidence-based policymaking in Palu City to combat childhood stunting. Policies and interventions that have the potential to significantly lower the prevalence of childhood stunting and improve the general health and well-being of young children in the city can be developed and implemented by policymakers by acknowledging the limitations of the study and taking into account its recommendations for future research.

5   Conclusion

Based on the study's findings, it can be deduced that maternal education (AOR=2.3, 95% CI: 1.1-4.8), maternal occupation (AOR=1.9, 95% CI: 1.1-3.4), cesarean delivery (AOR=2.3, 95% CI: 1.3-4.2), and past medical history (AOR=4.1, 95% CI: 1.3-12.9) were risk factors for stunting among infants and young children in Palu City. Improving mother's education, support for working women, promotion of normal delivery, as well as efforts to prevent and treat diseases in children can be important strategies to reduce stunting cases. Several recommendations can be put forward. Improving access and quality of education for women, especially those at lower levels of education, to increase understanding of child nutrition and health. Provide support and facilities for women who wish to work, including support for breastfeeding in the workplace and access to reproductive health. Encouraging the promotion of normal childbirth and

providing support for mothers who give birth by Sectio Secarea surgery. Increasing efforts to prevent and treat diseases in children, including ARI and diarrhea, to reduce the risk of stunting. Optimizing the Palu Maseha Program and other similar programs to increase community participation in improving children's health.

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