Media Information Exposure and Stunting Prevalence in Rural Area, Banyumas

by Arrum Maqfiroch

Submission date: 26-Oct-2021 07:43PM (UTC+0700)
Submission ID: 1684584776
File name: JURNAL_MEDIA_EXPOSURE.pdf (167.3K)
Word count: 3289
Character count: 18146

Media Information Exposure and Stunting Prevalence in Rural Area, Banyumas Regency, Indonesia

Siwi Pramatama Mars Wijayanti[1], Erna Kusumawati[2], Arrum Firda Ayu Maqfiroch[1], ColtiSistiarani[1]

1) Public Health Department, Faculty of Health Sciences, Jenderal Soedirman University, Purwokerto Indonesia
2) Nutrition science program, Faculty of Health Sciences, Jenderal Soedirman University, Purwokerto Indonesia

*Corresponding author:
Siwi Pramatama MW. Public Health Department, Faculty of Health Sciences,
Jenderal Soedirman University. B Building, Jl.dr. Soeparno, Karangwangkal.
Purwokerto Utara, Indonesia. Email: siwimars@gmail.com

ABSTRACT

Background: Stunting is a global public health priority with a target of reducing stunting prevalence by 40% between 2010 and 2025. Most of the stunting determinants are behavioral factors that can be prevented to reduce cases.

Purpose: This study aims to analyze the correlation between media information exposure, history of infectious diseases to the prevalence of stunting in the Banyumas Regency.

Methods: This is an analytical study with case-control design, located in 10 locus of stunting area inBanyumas Regency, Central Java. 181 cases and 181 control groups were involved in this study. Data collection was carried out using a structured questionnaire. The variables analyzed included characteristic, media exposure and history of infectious diseases in children. Data analysis was conducted by univariate, bivariate, and multivariate.

Results: This study highlighted the role of media information exposure to the prevalence of stunting in the study area (p.0.02), while the history of infectious diseases did not correlate to the prevalence of stunting. The media information exposure in the research covers the awareness, causes, features, and effects of stunting on children.

Conclusion: The importance of media exposure to increase parental knowledge and understanding to prevent stunting is required. It also requires efforts on the part of the different parties to implement health education with a variety of media to prevent and minimize the occurrence of stunting in the community.

Keywords: media information, stunting, children

How to cite this article: Wijayanti SMW, Kusumawati E, et al (2021): Media information exposure and stunting prevalence in rural area, Bayumas regency, Indonesia, Ann Trop Med & Public Health; 24(S03): SP24309. DOI: http://doi.org/10.36295/ASRO.2021.24309

Introduction

Stunting is the most important impediments to human growth, worldwide. concerning around 162 million children under the age of 5. This is a global public health concern with a goal of decreasing stunting prevalence by 40 percent between 2010 and 2025. The World Health Organization categorizes stunted children as those whose height for their age is lower than average, and at least two standard deviations below the median of the WHO's Child Growth Standards[1].Stunting may be induced during pregnancy by hereditary causes, inadequate hygiene and a lack of food intake. Meeting dietary needs from birth until the infant is two years old (the first 1000 days of life) is one way to prevent stunting, thus tracking their development. The dangerous effect of stunting is the serious physical and neurocognitive permanent harm that causes stunted development presents a significant challenge to human [2]. In this population of infants, early-onset chronic stunting has been associated with poorer cognitive growth in children at age 5. Early

childhood cognitive development includes the development of thinking, attention, memory and problem solving, both of which help children understand the world around them [3]. In the long term, stunting could lead to increased morbidity and mortality, poor infant development and learning ability, increased risk of adult infections and non-communicable diseases and decreased productivity and economic potential.

The prevalence of child stunting in Indonesia has remained high over the past decade and is around 37 per cent at the national level. Also illustrated by the varying percentage of stunting in each province is the existence of disparities in stunting conditions [4]. There are various possible triggers of stunting in Indonesia, including similar influences such as maternal nutritional status, breastfeeding habits, alternative feeding activities, and infection exposure, as well as associated distal determinants such as employment, food systems, health care, and facilities and services for water and sanitation. Recent studies show clear and reliable evidence that household and family factors — small maternal height, premature birth, small childhood, low maternal education and low household wealth — are significant proximal determinants of child stunting in Indonesia [5].

Efforts to prevent stunting must be taken seriously by targeting various groups, ranging from young women, married women and pregnant women. The problem that arises in several regions in Indonesia particularly in rural area is the lack of knowledge of women about stunting and how to prevent it. To minimize the incidence of stunting, awareness of preventive measures such as meeting dietary needs during pregnancy, regular prenatal care, exclusive breastfeeding, ensuring adequate food and eating habits are very relevant. However there is still limited information on how to expose mothers to stunting information, especially in rural areas. In addition, the presence of recurrent infectious diseases is also associated with the incidence of stunting. Recurring infectious diseases that have been encountered since childhood often cause the child's body to require more resources to combat disease. If adequate intake is not matched with this need, the child may suffer malnutrition and ultimately cause stunting. Several studies suggest an association between several infectious diseases such as diarrhea, malaria, acute respiratory infections, worm infections and an increased risk of stunting.

Banyumas Regency, Central Java, is one of the districts listed in the 100 priority districts / towns for stunting intervention. Stunting Data for 2018 in Banyumas Regency is stunting under five by 24.5%. Meanwhile, the prevalence of chronic energy deficiency in pregnant women in Banyumas Regency reached 36.56%, anemia in pregnant women was 25.96%, low birth weight babies reached 5.4% and low infant body length reached 5.68%. In this region the high incidence of stunting is important to research in relation to the factors that affect it. This study aims to analyze the correlation between media information exposure, history of infectious diseases to the prevalence of stunting in the Banyumas Regency

Methods

Study design and participants

This research is a case-control design conducted at 10 stunting loci in Banyumas Regency. The stunting locus data which became the research site was based on data from the Banyumas District Health Office. All stunting cases reported in 10 loci/villages in the Banyumas Regency area were the total sample taken in the study, a total of 181 children. All villages that were research locations were included in the category of rural areas. Controls were children around the house taken with a ratio of 1:1, 181 people who were not in the stunting category. Respondents in this study were mothers of children who were included in the case group (stunting) and the control group (normal).

Research Instruments

Exposure to knowledge, involvement in attending classes for pregnant women, participation in posyandu, participation in under-five classes, history of infectious diseases and occurrence of stunting were the variables explored in this research. The research instrument was a structured questionnaire that was validated by a team of research experts. Several questions were asked for

exposure of information, namely the definition of stunting, causes, characteristics and prevention efforts. In the meantime, questions were asked about several infectious diseases that children have suffered in the last 3 months for infectious diseases.

Data collection and analysis

The research data were collected by visiting the respondent 's house by asking structured questionnaire. Before being interviewed, information on the research was provided to respondents and informed consent was signed first. Data analysis with univariate, bivariate and multivariate analyzes. Univariate analysis by presenting data in frequency distribution table. Bivariate analysis was used to determine the extent of the relationship between media exposure and history of infectious diseases that were thought to be associated with stunting. The chi-square test was performed with a significance level ($\alpha = 0.05$) with a 95% confidence level (CI).

Ethical considerations

This research has received ethical permission from the ethics commission of the Faculty of Health Sciences, Jenderal Soedirman University No 002/EC/KEPK/X/2019

Results

A total of 181 respondents in the case group and control group participated in this study. The average age of the respondents, mothers in the case group was around 30.8 years, while the control group was 29.9 years old. Both the case and control groups mostly only have primary and junior high school completion education. Housewives are the main activity of the two groups in this study. A total of 42.5% of respondents live in houses with more than 4 members, while only 35.3% in the control group. Details of the characteristics of the respondents are shown in Table 1.

Table 1. Characteristics of respondents at 10 stunting loci in Banyumas District

Characteristic	Category	Stunting (n/%)	Normal (n/%)
Mother's level of education	Uneducated	9 (5%)	4 (2,3%)
	Elementary school	75 (41,4%)	66 (38,4%)
	Junior High School	57 (31,5%)	67 (38,9%)
	Senior High School	33 (18,2%)	23 (13,4%)
	University	7 (3,9%)	12 (6,9%)
Mother's job	Farmer	1 (0,5%)	0 (0)
	Farm workers	2 (1,1 %)	0 (0)
	Employee	3 (1,6%)	6 (3,3%)
	Civil servant	5 (2,8%)	1 (0,5%)
	Entrepreneur	8 (4,4%)	4 (2,2%)
	Housewives	155 (85,6%)	163 (90,1%)
	Teacher	7 (3,9%)	7 (3,9%)
Number of family members	> 4 people	77 (42,5%)	64 (35,3%)
	< 4 people	104 (57,5%)	117 (64,7%)
the average age of the mother		30,8 yearsold	29,9 yearsold

This study also asked respondents for several variables. Both the case and control groups were equally active in attending the Posyandu, but only 78.3% of the cases who answered had received information about stunting. Many respondents in the case and control groups understood what stunting was, in terms of thorough dissemination of details, but relatively few knew the causes, risk factors and stunting characteristics (Table 2).

Table 2. Detail of stunting information exposure

Variables	Category	Stunting	Normal	p
Follow a class for pregnant women	No	61 (41,2%	45 (29,8%)	0.09
	Yes	87 (58,8%)	106 (72,2%)	
Come to the posyandu	No	6 (3,8%)	16 (8,7%)	0.99
	Yes	154 (96,2%)	168 (91,3%)	
Come to toddler class	No	45 (30,4%)	138 (58,2 %)	0.35
	Yes	103 (69,6%)	99 (41,8%)	
Ever recieved stunting information	No	34 (21,6%)	24 (14,2%)	0.19
	Yes	123 (78,3%)	145 (85,8%)	
Last time received stunting information	Never	13 (9,3%)	10 (6,5%)	0.81
	Last month	89 (64%)	101 (66%)	
	Last week	37 (26,7%)	42 (27,5%)	
Information exposure of stunting	Never	29 (19,9%)	12 (8,2%)	0.02
	Stunting definition	91 (62,3 %)	96 (65,3%)	
	Causes of stunting	9 (6,2%)	4 (2,7%)	
	Characteristic of stunting	14 (9,6%)	23 (15,6%)	
	Prevention of stunting	3 (2%)	12 (8,2%)	

In addition, this study also recorded a history of infectious diseases experienced by children in the last 3month. Diarrhea and acute respiratory infections are the most common infectious diseases affecting children in the study area.

Table 3. History of infectious diseases

Variables	Category	Stunting	Normal	p
Diarrhea	Yes	45 (29,6%)	44 (26,7%)	0.56
	No	107 (79,4%)	121 (73,3%)	
Acute respiratory infection	Yes	55 (84,6%)	70 (41,4%)	0.25
	No	10 (15,4%)	99 (58,6%)	
Measles	Yes	5 (3,4%)	4 (2,45%)	0.62
	No	141 (99,6%)	158 (97,5%)	
Dengue infection	Yes	0 (0)	41 (20,3%)	0.33
	No	146 (100%)	161 (79,7 %)	

Discussion

The stunting problem requires prevention and handling efforts from different parties to reduce the incidence of stunting. This study highlighted the role of media information exposure to the prevalence of stunting in the study area (p.0.02), while the history of infectious diseases did not correlate to the prevalence of stunting. The media information exposure in the research covers the awareness, causes, features, and effects of stunting on children. The results of this study indicate that there is a lack of knowledge for mothers, in particular about risk factors, characteristics and ways to prevent stunting.Mothers need to realize that pregnant women's dietary intake of good quality food, as well as sufficient iron and folic acid during pregnancy is an essential combination of nutrients that can avoid stunting in infants. According to previous studies, anemia that results from iron deficiency in the first two trimesters is associated with a twofold risk of preterm birth and a threefold risk of low birth weight [6]. Red meat, poultry, and fish are among the best sources of iron for pregnant women. Mother can also get iron from nuts, vegetables, and whole grains and should start taking iron supplements with low doses (30 mg daily). In addition, iron-folic acid supplements (a combination of iron and folic acid) have a positive effect on the length of the baby at birth [7]. Lack of awareness by a mother can prevent her from taking the recommended steps to bear a healthy child.

This study shows the importance of continuously increasing exposure to information to mothers about stunting in a comprehensive manner. The results of this study indicate that mothers only know very little about stunting, but do not know well about the risk factors, characteristics and prevention of stunting. This lack of knowledge could be the root cause of why so many children are still born stunted. Previous research also reported that insufficient maternal dietary awareness and poor paternal education were related to stunting. Most of the community consider that stunting is solely influenced by the genetic factors of both parents, so that people sometimes just accept it without doing anything to prevent it. In fact, nutritional, social, environmental and cultural factors also determine it.

Mother participation in Posyandu was quite high (96.2 percent for group of cases and 91.3 percent for group of controls). Regular Posyandu activities can be a way to provide essential health information for mothers and kids, like stunting. In addition, mass media exposure is significant, as knowledge sources. Mass media delivers knowledge that is important for growing people's knowledge and understanding of the issues in their everyday lives. Information can be provided in various ways, such as direct counseling at the Posyandu, or by peer groups among mothers. In addition, the role of social media in the present era is also very important. Giving educational messages related to stunting can be given to various social media such as whataps groups, Facebook or Instagram. However, for mothers in rural areas who have less access to internet and social media, other more effective approaches to providing information can be used[8].

There was no significant relation in this study to the incidence of stunting for a history of infectious disease. It is likely as the proportion of disease infections that the case and control groups are reporting is almost the same. The groups suffered mainly from diarrhea and from acute respiratory infections. It is not in line with the previous studies that suggested a link existed between a history of infectious disease and stunting incidence [9,10]. Infection is one of the factors that can affect the occurrence of stunting because infection can divert energy for the growth of toddlers to the body's resistance to pathogens, so that nutrients are difficult to absorb and inhibit growth. One of the pathogenic infections associated with stunting is soil-transmitted helminth (STH) infection, namely *Ascarislumbricoides*, *Trichuristrichiura*, and hookworm consisting of *Necatoramericanus* and *Ancylostomaduodenale*. STH infection can cause a decrease in appetite, food intake, depletion and absorption of micronutrients as well as anemia so that toddlers lose nutrients [10]. This infectious disease is also related to the environmental and socioeconomic conditions of society. Previous research that renders the linkage between stunting and Integrated Water, Sanitation and Hygiene (WASH) practices [8,11,12]. The problem of stunting does require intervention from various fields, not only from health intervention. Stunting prevention is carried out through integrated nutrition interventions, including specific nutrition interventions and sensitive nutrition. Specific interventions relating to health interventions such as provision of supplementation and supplementary feeding. Specific interventions have been carried out in various countries aimed at changing feeding practices, supplementing with folic acid, calcium, zinc, vitamin A, balanced protein-energy supplementation, breastfeeding and complementary feeding, management of acute and severe malnutrition. Sensitive interventions include non-health interventions, improving the family economy, access to and use of clean water, sanitation (especially safe latrines and septic tanks), which are very much needed to support personal and environmental hygienic behavior [13].

Acknowledgement

We acknowledge Ministry of Health of the Republic of Indonesia, Division of Nutrition for the funding. We also acknowledge the students of Faculty of Health Sciences for their help during data collection.

References

1. WHO (2017) Stunting Policy Brief. https://www.who.int/nutrition/publications/globaltargets2025_policybrief_stunting/en/
2. de Onis M, Branca F (2016) Childhood stunting: a global perspective. Maternal & child nutrition 12 Suppl 1: 12-26.
3. Alam MA, Richard SA, Fahim SM, Mahfuz M, Nahar B, et al. (2020) Impact of early-onset persistent stunting on cognitive development at 5 years of age: Results from a multi-country cohort study. PLOS ONE 15: e0227839.
4. Hanson C, Allen E, Fullmer M, O'Brien R, Dearden K, et al. (2020) A National Communication Campaign in Indonesia Is Associated with Improved WASH-Related Knowledge and Behaviors in Indonesian Mothers. International journal of environmental research and public health 17: 3727.
5. Beal T, Tumilowicz A, Sutrisna A, Izwardy D, Neufeld LM (2018) A review of child stunting determinants in Indonesia. Maternal & Child Nutrition 14: e12617.
6. Rahman MS, Mushfiquee M, Masud MS, Howlader T (2019) Association between malnutrition and anemia in under-five children and women of reproductive age: Evidence from Bangladesh Demographic and Health Survey 2011. PloS one 14: e0219170-e0219170.
7. Nisar YB, Dibley MJ, Aguayo VM (2016) Iron-Folic Acid Supplementation During Pregnancy Reduces the Risk of Stunting in Children Less Than 2 Years of Age: A Retrospective Cohort Study from Nepal. Nutrients 8: 67.
8. Hall C, Syafiq A, Crookston B, Bennett C, Hasan M, et al. (2018) Addressing Communications Campaign Development Challenges to Reduce Stunting in Indonesia. Health 10: 1764-1778.
9. Guerrant RL, Oriá RB, Moore SR, Oriá MOB, Lima AAM (2008) Malnutrition as an enteric infectious disease with long-term effects on child development. Nutrition reviews 66: 487-505.
10. Hailegebriel T (2018) Undernutrition, intestinal parasitic infection and associated risk factors among selected primary school children in Bahir Dar, Ethiopia. BMC infectious diseases 18: 394-394.
11. Kwami CS, Godfrey S, Gavilan H, Lakhanpaul M, Parikh P (2019) Water, Sanitation, and Hygiene: Linkages with Stunting in Rural Ethiopia. International journal of environmental research and public health 16: 3793.
12. Maleta KM, Manary MJ (2019) WASH alone cannot prevent childhood linear growth faltering. The Lancet Global Health 7: e16-e17.
13. Aguayo VM, Menon P (2016) Stop stunting: improving child feeding, women's nutrition and household sanitation in South Asia. Maternal & child nutrition 12 Suppl 1: 3-11.

Media Information Exposure and Stunting Prevalence in Rural Area, Banyumas

ORIGINALITY REPORT

13%	11%	7%	%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	ppjp.ulm.ac.id Internet Source	4%
2	repository.unmul.ac.id Internet Source	2%
3	Ty Beal, Alison Tumilowicz, Aang Sutrisna, Doddy Izwardy, Lynnette M. Neufeld. " A review of child stunting determinants in ", Maternal & Child Nutrition, 2018 Publication	1%
4	Alayou Geletaw, Gudina Egata, Fitsum Weldegebreal, Gesessew Kibr, Mohammed Semaw. "Nutritional Status and Associated Factors among Primary Schoolchildren from Pastoral Communities, Mieso-Mulu District, Sitti Zone, Somali Regional State, Eastern Ethiopia: Institution-Based Cross-Sectional Study", Journal of Nutrition and Metabolism, 2021 Publication	1%

www.mdpi.com

5	Internet Source	1 %
6	worldwidescience.org Internet Source	1 %
7	www.peertechzpublications.com Internet Source	1 %
8	ojs.unpkediri.ac.id Internet Source	1 %
9	www.jphres.org Internet Source	1 %
10	journals.plos.org Internet Source	1 %
11	Muslihudin, T R Wulan, T Sugiarto, S Wardhianna, S Wijayanti. "Initial Implementation of Productive Migrant Village (PMV) Programs in Banyumas Central Java Indonesia", SHS Web of Conferences, 2020 Publication	1 %
12	wmmjournal.org Internet Source	1 %

Exclude quotes	On	Exclude matches	< 1%
Exclude bibliography	On		