

The Impact of Community Health Education Media in the Industrialization Era on the Diet of High Risk Pregnant Women

Yusriani* Septiyanti

Universitas Muslim Indonesia, Indonesia

*Email: yusriani.yusriani@umi.ac.id

Submitted: 21 October 2020. Revised: 13 November 2020. Accepted: 23 September 2021

Abstract. Nutritional problems are still a global problem throughout the world. Media is one of the things that needs to be considered in conducting health promotion as an impact of the industrial era. This study aims to determine the effect of health education media in the industrial era on changes in behavior of pregnant women at high risk in dietary care. This research was carried out in the Work Area of the Makassar City Kassi-kassi Health Center. This research is a quasi-experimental quantitative type with a non-equivalent control group design using a purposive sampling method. The population in this study were pregnant women which consisted of 214 pregnant women. The sample size in this study was 40 pregnant women in the experimental group and 40 pregnant women in the control group. Data collection uses the observation method, interviews using a pre and post test questionnaire in the group. The intervention was given a community health education media in the form of audio visual aids, namely video and in the control group a visual education aid was provided in the form of visual aids, namely a poster. Data analysis using Wilcoxon test and Mann Whitney test. The results of the study using the Wilcoxon test found that the media of health education in the form of effective videos of changes in the care of eating patterns of high risk pregnant women (p value <0.005). While health education media such as posters did not affect the change in care of diet for high-risk pregnant women (p value >0.005). Research novelty found that in the industrialization era audio visual (video) media is more effective than visual media (posters) in community health education. Extension needs to be done by using videos so that the eating patterns of pregnant women are at high risk of becoming better.

Key words: community health education, high risk, media, pregnant woman

How to Cite: Yusriani & Septiyanti. (2021). The Impact of Community Health Education Media in the Industrialization Era on the Diet of High Risk Pregnant Women. *Journal of Nonformal Education*, 7(2), 259-267.

DOI: <http://dx.doi.org/10.15294/jne.v7i2.31793>

INTRODUCTION

The problem of nutrition is still a global problem throughout the world. The prevalence of macro and micronutrient deficiencies throughout the world has increased dramatically, putting nutritional problems as one of the issues that needs serious attention, especially in nutrition-prone groups, one of which is pregnant women and children under two years (baduta). It really requires comprehensive treatment and starts from nutrition care in pregnancy. Deficiency must be considered a disease or a risk factor for nutritional status and other diseases.

Indonesia is also included in 47 countries out of 122 countries that have anemia in women of childbearing age (WUS) and coverage of Early Breastfeeding Initiation (IMD), exclusive breastfeeding, TTD of pregnant women is still relatively low (Achadi, 2014). If this is not resolved immediately, in the long run it will result in the loss of the potential of smart and quality young generation (lost generation) so that children become unproductive and unable to compete in the future.

Through the SUN movement, 50 countries including Indonesia are committed to improving the political environment, advancing policies and laws

and accelerating effective nutrition scaling up (Minister of Health, 2017). The commitment of the Government of Indonesia has been stated through Government Regulation No. 42 of 2013 concerning the National Movement for the Acceleration of Nutrition Improvement, and on October 30, 2013 the President of the Republic of Indonesia launched the "National Movement for the Acceleration of Nutrition Improvement in the Framework of the First Thousand Days of Life" (1000 HPK Movement) (UNICEF, 2018).

The fulfillment of optimal nutrition during the first thousand days of life, in addition to providing opportunities for children to live longer, healthier, more productive, and lower risk of degenerative diseases in adulthood, also plays a positive role in breaking the poverty chain. This is made possible by the intervention efforts to improve nutrition of pregnant women, infants, and toddlers, thus giving birth to healthy children (Andarwulan, 2016; Patimah, 2017; Wirjatmadi & Adriani, 2012).

Based on data from the South Sulawesi Provincial Health Office, RISTI pregnant women who received health workers increased, in 2016 amounted to 28,235 pregnant women and 29,386 pregnant women in 2017. While RISTI pregnant women in Makassar

also experienced an increase in 2016 by 5,043 pregnant women and in 2017 amounted to 5,364.

Data from the Kassi-Kassi Community Health Center in 2016 recorded 285 RISTI pregnant women and increased in 2017 with 367 RISTI pregnant women, where the most pregnant women with KEK had 136 pregnant women. The nutritional and health status of pregnant women and young people as a determinant of the quality of human resources, is increasingly evident with evidence that nutritional status during pregnancy and when breastfeeding until a two-year-old child is a very critical period. The thousand-day period, which is 270 days during pregnancy and 730 days in the baby's first life, is a sensitive period because the effects on the baby at this time will be permanent and cannot be corrected. The impact is not only on physical growth, but also mental development and intelligence, which in adulthood can be seen from the physical size that is not optimal and the quality of work that is not competitive resulting in low work productivity (Fairus, 2012; Husnah, 2017).

Although impaired physical growth of children can still be corrected later on with an increase in good nutritional intake, but not with the development of intelligence. Scientific facts indicate that malnutrition experienced by pregnant women who then continues until the child is 2 years old will result in a decrease in children's intelligence. Unfortunately this period is often not the focus of family attention, both due to lack of knowledge and missed priority scale that must be met.

Enough nutritional knowledge is expected to be able to change the behavior that is not right so that they can choose nutritious food and compile a balanced menu in accordance with the needs and tastes, and know the consequences of malnutrition. Giving good nutritional knowledge, is expected to change the eating habits that were originally less for the better.

Strategies to improve high risk pregnant women knowledge, attitudes, and practices regarding nutrition and reproductive health have consistently contributed to reducing child stunting in Indonesia. (Hall et al., 2018; Simanjuntak et al., 2019). Most of the mothers in this country are the primary caregivers for their babies and decide on feeding patterns, immunisation, and health services (Titaley et al., 2019; Torlesse et al., 2016). Therefore, educational methods as an intervention to improve mothers' knowledge, attitudes, and practices have been implemented based on the theory of changes behavior (Mahmudiono et al., 2018; Schrader & Lawless, 2004). Research on knowledge, attitude, and behaviour has assessed the success of an educational method by applying a pre-test and post-test research design, such as a quasi-

experimental or randomized trial) (Schrader & Lawless, 2004). The interactions between knowledge, attitude, and behaviour initiate a potentially reciprocal and dynamic relationship: knowledge regarding nutrition and reproductive health can inform attitude about that topic, which can influence behavior (Schrader & Lawless, 2004). Improving knowledge, attitude, and behaviour during pregnancy is important as it determines post-partum quality of life for the mother and her babies. For example, success of early breastfeeding initiation and exclusive breastfeeding can be determined by mothers' intention during pregnancy to breastfeed (Permatasari et al., 2016, 2018; Permatasari & Syafruddin, 2016).

The purpose of this study was to assess the effect of health education media in the industrial era on changes in behavior of pregnant women at high risk in dietary care. This study used interactive education methods that cover four topics: parenting, balanced diet, high risk pregnant woman, and reproductive health. Each topic was addressed using different techniques: audio visual aid (video), and visual aids by interesting poster. This educational method could be adopted or modified by the government and other health care providers in an effort to reduce the high risk pregnant woman.

METHODS

This research was conducted using experimental research methods. Experimental research is a research method used to look for the effect of certain treatments on others under controlled conditions (Sugiyono, 2009). The experimental research method used is quasi-experimental with a non-equivalent control group design. This research was conducted in the working area of the Kassi-kassi Puskesmas Makassar City. The pre-test was conducted at the Kassi-kassi Public Health Center in Makassar City, the post-test was a visit to the house of the respondent's pregnant women.

The population in this study were pregnant women registered at the Kassi-kassi Health Center in Makassar City in July 2018, as many as 214 pregnant women. The sample size in this study were 80 RISTI pregnant women, divided into 40 RISTI pregnant women in the experimental group and 40 RISTI pregnant women in the control group. According to Roscoe in the book *Research Methods for Business* (1982), for simple experimental research, which uses experimental and control groups, the number of sample members is between 10 and 20, respectively (Sugiyono, 2009).

The sampling method in this study uses Non Probability Sampling with purposive sampling technique that is the determination of the sample

based on criteria established by the researcher, the criteria set include inclusion criteria including pregnant women who are willing to become respondents of the study, having at least one high risk pregnancy, trimester II and trimester III gestational age. While the exclusion criteria are pregnant mothers who are sick, and pregnant women who live outside the working area of the Kassi-Kassi Health Center in Makassar City.

This education intervention was designed according to the characteristics and information required by pregnant women based on the result of the FGD that involved stakeholders, community leaders, community health workers, and pregnant women, who provided suggestions so that the educational methods used would be easy to understand and implemented during the pregnancy period to prevent maternal death. The majority of pregnant women had low education and socio-economic level in the study area. Their literacy level might have been a barrier to access information regarding nutrition and reproductive health. They are generally housewives who have sufficient time to receive nutrition and reproductive health education for 2 h. These data are reinforced by data obtained from health profile reports and socio-demographics. Advice from nutrition and reproductive health experts also confirms this method. Interactive education can increase participants' interest and concentration in receiving education. So this method can improve the knowledge, attitudes, and practices regarding nutrition and reproductive health, to prevent maternal mortality rate since the pregnancy period.

Nutrition and reproductive health education to high risk woman pregnancy was given to the intervention group and control group. They were placed in small groups (four or five mothers per group) and received 2 h of nutrition and reproductive health education from a facilitator every 2 weeks for 3 consecutive months using audio visual aids to intervention group and visual aids to control group. The education consisted of three sessions that included theoretical (lectures) and practical sessions. The first covered parenting (psycho-emotional and nutritional parenting) and was complemented by role-playing. The second covered nutrition during pregnancy, high risk pregnant, and immunity. This session was reinforced by simulation to assess nutritional status and nutritional requirements for the first 1000 days of life. In this session, the facilitator used two packets of nutrition discs, one consisting of eight discs that determine the nutritional status of children based on age groups, and another consisting of eight discs focussed on the needs of balanced nutrition from the gestational period through adolescence (19 years). The third session covered

reproductive health education, equipped with the games of myths and facts. The control group received information from visual aids like as poster about the usual nutrition and reproductive health education that is provided in the health program regularly every month. In this routine health program, pregnant women are informed about maternal and child health including nutrition and reproductive health, children's weight and height are measured, and children are given primary immunizations.

Four women nutritionists acting as data collectors and two public health practitioners as supervisors were given 2 days of training. The questionnaire was pre-tested on 5% of the representative sample assessed in other areas with characteristics similar to those of the study area. Data collectors administered the questionnaire through face-to-face interviews at the pregnant women's homes and were overseen by supervisors periodically. All questionnaires were verified for completeness and accuracy by data collectors.

All data in the questionnaire were checked for missing values, including maternal characteristics and practices. Furthermore, data were coded and input using SPSS version 20.0. Variables with continuous data, including practices scores, were analysed for normality using the Kolmogorov-Smirnov test. Based on the Kolmogorov test, all variables including practices showed not normal distribution. Descriptive statistics consisting of the mean, standard deviation, and percentage were analysed by univariate analysis, while variables with categorical data were analysed using the wilcoxon test. A 95% confidence level and a value of $P < 0.05$ were used to assess the statistical significance. Mann Whitney u-test was used to see significant differences in pre-test and post-test scores between the intervention group and control group, and wilcoxon test was used for continuous variables within groups at pre-test and post-test.

RESULTS AND DISCUSSION

The results of this study were obtained through filling out the questionnaire by means of direct interviews and direct measurements to respondents. Respondents in this study were 40 high risk pregnant women. Based on the data processing, the following results are obtained:

Univariate Analysis

From the results of questionnaire data distributed to 40 respondents it is known that the age of the respondent group ranged from 16 years to 44 years, both for the experimental group and the control group. Maternal characteristics included socio-demographic characteristics, obstetric history,

information on nutrition and reproductive health, and socio economic as represented in Table 1 and 2.

Table 1. Characteristics of Pregnant Women

No	Characteristic Responden	Group of Sampel				Total	
		Experimen		Control		n	%
		n	%	n	%		
	Age (Tahun)						
1.	< 20	4	20	3	15	7	17,5
2.	20 - 34	9	45	6	30	15	37,5
3.	≥ 35	7	35	11	55	18	45
	Age of Pregnancy						
1.	Trimester II	16	80	14	70	30	75
2.	Trimester III	4	20	6	30	10	25
	Education						
1.	SD	8	40	5	25	13	32,5
2.	SMP	4	20	3	15	7	17,5
3.	SMA	7	35	11	55	18	45
4.	S1	1	5	1	5	2	5
	Job						
1.	Government employees	0	0	1	5	1	2,5
2.	Private employees	0	0	0	0	0	0
3.	Entrepreneur	0	0	3	15	3	7,5
4.	Housewife	20	100	16	80	36	90
	Total	20	100	20	100	40	100

Source : Primary Data

Based on table 1 the distribution of respondents according to age group of 20 experimental groups of 20 people and the control group. The number of respondents aged <20 years was 7 people (17.5%), respondents aged 20-34 years were 15 people (37.5%), and the most were respondents aged ≥ 35 years as many as 18 people (45%). Distribution of respondents according to gestational age to 20 people in the experimental group and 20 people in the control group. The number of respondents who entered the second trimester of pregnancy was 30 people (75%), and respondents of the gestational age entering the third trimester were 10 people (25%).

Distribution of respondents according to education of 20 experimental groups of 20 people and the

control group. The number of respondents with primary education level was 13 people (32.5%), respondents with junior high school education were 7 people (17.5%), respondents with the highest education level were 18 people (45%), and respondents with levels the least education is S1 as many as 2 people (5%). Distribution of respondents according to work of 20 people in the experimental group 20 people and the control group. The number of respondents with civil servant jobs was 1 person (2.5%), respondents with self-employed employment were 3 people (7.5%), respondents with the most jobs were housewives with 36 people (90%).

Table 2. Characteristics of Respondents by Type of Pregnancy Risk

Types of Pregnancy Risk	Group of Sampel				Total	
	Experimen		Experimen		n	%
	n	%	n	%		
KEK	9	21	5	14,7	14	18,2
Age ≤ 20 years	5	11,6	3	8,8	8	10,4
Age ≥ 35 years	7	16,3	11	32,4	18	23,3
Parity ≥ 4 x	5	11,6	4	11,8	9	11,7
BB <45 Kg	8	18,6	1	2,9	9	11,7
TB <145 cm	4	9,3	2	5,9	6	7,8
Parity Distance <2 years	4	9,3	5	14,7	9	11,7
Parity Distance ≥ 10 years	1	2,3	3	8,8	4	5,2

Source : Primary Data

Based on table 2 the distribution of respondents according to the type of pregnancy risk for 20 people in the experimental group and 20 people in the control group, it is known that most respondents have ≥ 1 risk factors for pregnancy. The number of respondents with the highest risk of pregnancy, i.e. those aged ≥ 35 years were 18 people (23.3%).

Bivariate Analysis

Bivariate analysis is used in testing the hypotheses described previously. Hypothesis testing aims to test differences in eating patterns of pregnant women before (pre-test) and after (post-test) education.

Based on table 3 shows that in the experimental group obtained pretest as many as 11 people (55%)

have enough diet and 9 people (45%) have less diet. After being educated, posttest results were obtained as many as 11 people (55%) had adequate diet and 9 people (45%) had poor diet. Whereas in the control group pretest was obtained as many as 12 people (60%) had enough knowledge and 8 people (40%) had less knowledge. Then obtained posttest results as many as 12 people (60%) have enough knowledge and 8 people (40%) have less knowledge.

There was a significant difference between pre-test and post-test in IG ($P < 0.001$) for each question in this aspect. The participants' practices of nutrition during pregnancy, high risk pregnancy, and immunity improved after education.

Table 3. Distribution of Respondents' Diets Before and After Education

Dietary habit	Experimen Group				Control Group			
	Pre Test		Post Test		Pre Test		Post Test	
	n	%	n	%	n	%	n	%
Enough	11	55	11	55	12	60	12	60
Less	9	45	9	45	8	40	8	40
Total	20	100	20	100	20	100	20	100

Source : Primary Data

Table 4. Analysis of Changes in Diet

Dietary habit	Sampel Group			
	Experiment		Control	
	N	P Value	n	P Value
Decrease	0		0	
Increase	13	0,001	0	1,000
Stay	7		20	

Source : Primary Data

Based on table 4 an analysis of changes in pre-test and post-test eating patterns shows that in the experimental group as many as 13 respondents experienced an increase in eating patterns and as many as 7 respondents whose diet was fixed. Then seen from the p value of 0.001 which means that there are significant changes between the eating patterns of pregnant women before and after education.

In the control group as many as 20 respondents fixed diet. Based on the results of the statistical test the value is constant, the pre-test and post-test diet score is equal to the p value of 1,000 which means that there is no change between the eating patterns of pregnant women who are not given education

Daily diet is a person's diet related to daily eating habits. Good knowledge of a person's nutrition will make that person more and more take into account the amount and type of food they choose to consume. Pregnant women who have insufficient nutritional

knowledge will behave in choosing foods that attract the five senses and do not make choices based on the nutritional value of these foods. Conversely those who have good knowledge tend to use more rationally and knowledge about the nutritional value of these foods.

The results of the study of eating habits in the experimental group showed that the respondents' daily eating habits at the first measurement (pretest) of 55% of pregnant women were in the sufficient category. Whereas in the second measurement (posttest) that is 3 weeks after the education was carried out, the respondents' eating habits remained at 55% of respondents in the sufficient category. The results of this study are in line with research conducted qualitatively which states that although respondents already know the type of nutritious food which of course can also choose food ingredients that have high nutritional value, but in practice, respondents are still lacking in eating patterns or good

eating habits and portions foods that tend to be incomplete and few in number (Febriantika, 2017; Pratama et al., 2017; Wahyuni, 2015; Widy, 2014).

This is in line with the opinion that the knowledge possessed by a mother will influence in decision making and also affect her behavior. Mothers with good nutritional knowledge are likely to provide adequate nutrition for their babies. This is even more so if a mother enters a period of cravings, where the stomach does not feel like filling, nausea and abysmally. Although in such conditions if someone has good knowledge then he will try to meet the nutritional needs and also the baby (Riftana, 2013; Sunarsih et al., 2017).

Knowledge, attitude, and practices regarding nutrition and reproductive health are the main factors that can influence pregnancy outcomes (Garg et al., 2010; Hitachi et al., 2019). The finding of this study indicates that participants have a lack of practices regarding nutrition and reproductive at baseline. In this study, the practices mean scores were significantly ($P = 0.001$) improved after education in the IG. In the CG, there was no significant difference ($P > 0.05$) in mean practices scores regarding nutrition and reproductive health between pre-test and post-test. This study also shows that education intervention effectively provides a significant ($P < 0.05$) difference in the mean practices scores between the IG and CG at the end line, respectively of the IG and CG between pre-test and post-test. Similarly, a cluster randomized control trial study among pregnant women in Northeast Ethiopia showed that nutrition education significantly improved ($P < 0.001$) mean nutritional knowledge scores in the intervention group, from 6.9 at baseline to 13.4 after nutrition education. There was a significant difference ($P < 0.001$) in mean nutritional knowledge scores between the intervention group and control group at baseline. The study also shows that proportion of healthy dietary practices was significantly different ($P < 0.001$) between pregnant women who were given nutrition education in the intervention group compared to the control group at the end line (Diddana et al., 2018). A study among pregnant women in Addis Ababa showed that nutrition knowledge scores improved after the nutrition education program from 53.9 to 97.0%, whereas dietary practice scores during pregnancy increased from 46.8 to 83.7% (Mugyia et al., 2016). These studies reinforce the evidence that nutrition education has a positive effect on improving the knowledge, attitudes, and practices scores among pregnant women.

The results of research on eating patterns in the control group showed that the respondents' eating patterns in the first (pretest) and second (posttest)

measurements had the same percentage of 60% of RISTI pregnant women in the sufficient category. This means that there was no change in the practice of RISTI pregnant women 's eating patterns in both measurements. This is also reinforced by Fadjria's research, that the behavior of eating habits is formed due to several factors namely the practice of food, reasons for eating, types of food eaten, and nutritional knowledge. Improved eating patterns are in line with SOR's theory that with the support of facilities and environmental stimulus provided can continue then shape a person's behavior. Changing practices especially individual behavior is not easy to depend on commitment and support from the surrounding environment. The research shows that even though respondents already have positive knowledge and attitudes towards the 1000 HPK Movement, it does not necessarily make the 1000 HPK Movement a healthy behavior in their daily lives.

As in the study entitled "Descriptive study of knowledge and attitudes of pregnant women about nutrition in the first 1000 days of life in the Sokaraja health center in Banyumas district" results of the fisher exact correlation test (0.589) which means there is no relationship between knowledge and attitudes of pregnant women towards nutrition in the first 1000 days of life . So not always pregnant women with insufficient knowledge will be not supportive of nutrition for the first 1000 days of life and vice versa. This is because there are several factors that influence the attitude of pregnant women, namely: physiological factors (age and health), direct experience factors on attitude objects, reference frame factors and social communication factors (Sudargo & Aristasari, 2018; Wahyuningsih et al., 2020; Y. Yusriani & Acob, 2020).

The failure of fetal growth during pregnancy is significantly related to stunted child growth (Vir, 2016). Pregnant women have central roles in achieve optimal growth during this critical period (Titaley et al., 2019; Vir, 2016). The 194 pregnant women who participated in this study have a high risk of having stunted children, generally. They live in rural areas with low socio-economic levels that are related to a lack of food availability in the household (Jonah et al., 2018; Nshimiyiryo et al., 2019). Another study among pregnant women in rural Punjab showed that education and parity were significantly associated with knowledge, attitude, and dietary practices (Mal-kanthi et al., 2010; Purnomo et al., 2020; Singh & Deepti, 2019). The WHO reported that mothers with low income and a low level of education experience more difficulty affording adequate food to provide a nutritious and diverse diet (WHO, 2018). The findings of this study also indicate that about one-third of pregnant women (33.0 and 28.9% in IG and

CG, respectively) also have a short stature (>150 cm), which may increase risk of having stunted children (Addo et al., 2013; Javid & Pu, 2020; Sinha et al., 2018). A 19-year-old woman with a height at least two standard deviations below the average (>150 cm) has short stature, according to the WHO provision (Group & de Onis, 2006). Javid and Pu showed in the Pakistan Demographic and Health Survey of 2012–13 that short-stature mothers (height >150 cm) were about 2.0 times more likely to have a stunted child compared to tall-stature mothers (Javid & Pu, 2020). Participants in this study also have not utilised health services optimally. More than one-third of those who have given birth delivered their babies at home and were helped by traditional birth attendants. They did not receive adequate health care in the early life of the baby, which is a crucial stage associated with pregnancy outcomes. This condition indicates a low quality of maternal health care, which may significantly affect child stunting (Beake et al., 2017; Wong et al., 2017).

The absence of a relationship between a person's knowledge is also usually due to the attitude that in addition to being influenced by internal factors (psychological and physiological) is also influenced by external factors (communication or interaction between individuals, as well as between individuals and groups) (Baroroh et al., 2020; Hasyati et al., 2019; Yusriani & Alwi, 2018; M. K. Yusriani & Nugroho, 2018).

Similarly, a quasi-experimental study in Brebes District, Central Java in Indonesia, showed that reproductive health education improved knowledge among brides and grooms (Wemakor & Mensah, 2016). Additional evidence in Somalia shows that they have a lack of knowledge about reproductive health that confirmed the need for proper nutrition education (Nugraheni et al., 2018). Reproductive health during pregnancy is fundamental to ensuring all women have access to respectful and high-quality maternity care to increase maternal health and pregnancy outcomes (Gure et al., 2015).

This study contributes to increasing intensive nutrition and reproductive health education efforts implemented in the wider community. Such studies provide scientific evidence as consideration for policymakers, researchers, program practitioners and implementers, non-governmental organisations, health workers, community health workers, and the entire community to improve knowledge, attitudes, and practices regarding nutrition and reproductive health, in order to reduce maternal mortality rate.

CONCLUSION

The media of health education in the form of effective videos of changes in the care of eating patterns of high risk pregnant women (p value <0.005). While health education media such as posters did not affect the change in care of diet for high-risk pregnant women (p value >0.005). Audio visual (video) media is more effective than visual media (posters). Extension needs to be done by using videos so that the eating patterns of pregnant women are at high risk of becoming better.

ACKNOWLEDGMENT

We would like to thank all the respondents of this research in Kassi-Kassi Health Centre Makassar city, especially to the local government of Makassar supporting this research.

REFERENCES

- Achadi, E. L. (2014). Periode Kritis 1000 Hari Pertama Kehidupan dan Dampak Jangka Panjang terhadap Kesehatan dan Fungsinya. *FKM Universitas Indonesia*.
- Addo, O. Y., Stein, A. D., Fall, C. H., Gigante, D. P., Guntupalli, A. M., Horta, B. L., Kuzawa, C. W., Lee, N., Norris, S. A., & Prabhakaran, P. (2013). Maternal height and child growth patterns. *The Journal of Pediatrics*, *163*(2), 549–554.
- Andarwulan, N. (2016, January). 1000 HPK: Warisan Untuk Anak dan Cucu. Food for Kids. *Food For Kids*, 106. <https://adoc.pub/queue/food-1000-hpk-for-kids-warisan-untuk-anak-cucu-asal-luar-bia.html>
- Baroroh, S. A., Budiartati, E., & Fakhruddin, F. (2020). Implementation of Parenting Education in Early Childhood Education Institutions. *Journal of Nonformal Education*, *6*(1), 77–84.
- Beake, S., Bick, D., Narracott, C., & Chang, Y. (2017). Interventions for women who have a caesarean birth to increase uptake and duration of breastfeeding: A systematic review. *Maternal & Child Nutrition*, *13*(4), e12390.
- Diddana, T. Z., Kelkay, G. N., Dola, A. N., & Sadore, A. A. (2018). Effect of nutrition education based on health belief model on nutritional knowledge and dietary practice of pregnant women in Dessie Town, Northeast Ethiopia: A cluster randomized control trial. *Journal of Nutrition and Metabolism*, *2018*.
- Fairus, M. (2012). Buku Saku Gizi & Kesehatan Reproduksi. Penerbit Buku Kedokteran EGC, Jakarta.

- Febriantika, N. (2017). Pengaruh Promosi Kesehatan Terhadap Pengetahuan Ibu Mengenai Gizi Ibu Hamil Di Puskesmas Pasir Kecamatan Ciampea Kabupaten Bogor Tahun 2016. *HEARTY: Jurnal Kesehatan Masyarakat*, 5(2).
- Garg, R., Deepti, S., Padda, A., & Singh, T. (2010). Breastfeeding knowledge and practices among rural women of Punjab, India: a community-based study. *Breastfeeding Medicine*, 5(6), 303–307.
- Group, W. H. O. M. G. R. S., & de Onis, M. (2006). WHO Child Growth Standards based on length/height, weight and age. *Acta Paediatrica*, 95, 76–85.
- Gure, F., Yusuf, M., & Foster, A. M. (2015). Exploring Somali women's reproductive health knowledge and experiences: results from focus group discussions in Mogadishu. *Reproductive Health Matters*, 23(46), 136–144.
- Hall, C., Bennett, C., Crookston, B., Dearden, K., Hasan, M., Linehan, M., Syafiq, A., West, S., & West, J. (2018). Maternal knowledge of stunting in rural Indonesia. *International Journal of Child Health and Nutrition*, 7(4), 139–145.
- Hasyati, H., Idris, F. P., & Yusriani, Y. (2019). The Effect of Media Against Implementation of Early Initiation of Breastfeeding in Four Work Area Makassar Maternity Hospital. *Window of Health: Jurnal Kesehatan*, 88–96.
- Hitachi, M., Honda, S., Kaneko, S., & Kamiya, Y. (2019). Correlates of exclusive breastfeeding practices in rural and urban Niger: a community-based cross-sectional study. *International Breastfeeding Journal*, 14(1), 1–9.
- Husnah, H. (2017). Nutrisi pada 1000 Hari Pertama Kehidupan. *Jurnal Kedokteran Syiah Kuala*, 17(3), 179–183.
- Javid, N., & Pu, C. (2020). Maternal stature, maternal education and child growth in Pakistan: a cross-sectional study. *AIMS Public Health*, 7(2), 380.
- Jonah, C. M. P., Sambu, W. C., & May, J. D. (2018). A comparative analysis of socioeconomic inequities in stunting: a case of three middle-income African countries. *Archives of Public Health*, 76(1), 1–15.
- Mahmudiono, T., Mamun, A. Al, Nindya, T. S., Andrias, D. R., Megatsari, H., & Rosenkranz, R. R. (2018). The effectiveness of nutrition education for overweight/obese mother with stunted children (NEO-MOM) in reducing the double burden of malnutrition. *Nutrients*, 10(12), 1910.
- Malkanathi, R., Silva, K., & Jayasinghe-Mudalige, U. K. (2010). Risk factors associated with high prevalence of anemia among children under 5 years of age in paddy-farming households in Sri Lanka. *Food and Nutrition Bulletin*, 31(4), 475–482.
- Minister of Health. (2017). *Kualitas Manusia Ditentukan Pada 1000 Hari Pertama Kehidupannya*. <https://www.kemkes.go.id/article/view/17012300003/kualitas-manusia-ditentukan-pada-1000-hari-pertama-kehidupannya.html>
- Mugyia, A. S. N., Tanya, A. N. K., Njotang, P. N., & Ndombo, P. K. (2016). Knowledge and attitudes of pregnant mothers towards maternal dietary practices during pregnancy at the Etoug-Ebe Baptist Hospital Yaounde. *Health Sciences and Disease*, 17(2).
- Nshimiyiryo, A., Hedt-Gauthier, B., Mutaganzwa, C., Kirk, C. M., Beck, K., Ndayisaba, A., Mubiligi, J., Kateera, F., & El-Khatib, Z. (2019). Risk factors for stunting among children under five years: a cross-sectional population-based study in Rwanda using the 2015 Demographic and Health Survey. *BMC Public Health*, 19(1), 1–10.
- Nugraheni, S. R. I. A., Martini, M., Kartasurya, M. I., & Sulistyowati, E. (2018). *Knowledge and attitudes about reproductive health and pregnancy preparedness: preliminary study of brides and grooms in Brebes district, Central Java, Indonesia*.
- Patimah, S. (2017). *Gizi Remaja Putri Plus 1000 Hari Pertama Kehidupan* (1st ed.). PT Refika Aditama.
- Permatasari, T. A. E., Achadi, E. L., Purwono, R. U., Irawati, A., Ocviyanti, D., & Martha, E. (2016). Does Breastfeeding Intention Among Pregnant Mothers Associated with Early Initiation of Breastfeeding? *Indonesian Journal of Reproductive Health*, 7(3), 169–184.
- Permatasari, T. A. E., Sartika, R. A. D., Achadi, E. L., Purwono, U., Irawati, A., Ocviyanti, D., & Martha, E. (2018). Exclusive breastfeeding intention among pregnant women. *Kesmas: Jurnal Kesehatan Masyarakat Nasional (National Public Health Journal)*, 12(3), 134–141.
- Permatasari, T. A. E., & Syafruddin, A. (2016). Early initiation of breastfeeding related to exclusive breastfeeding and breastfeeding duration in rural and urban areas in Subang, West Java, Indonesia. *Journal of Health Research*, 30(5), 337–345.
- Pratama, A. P., Riyanti, E., & Cahyo, K. (2017). Pengaruh edukasi gerakan 1000 hpk terhadap perbaikan pola makan ibu hamil risti di wilayah kerja puskesmas kedungmundu kota semarang. *Jurnal Kesehatan Masyarakat (Undip)*, 5(5), 926–938.
- Purnomo, P., Hufad, A., Wahyudin, U., Akhyadi, A. S., & Lutfiansyah, D. Y. (2020). Needs Assessment Knowledge from Facilitator of Community Empowerment Program in the Digital Era. *Journal of Nonformal Education*, 6(2), 130–138.
- Riftana, F. D. C. (2013). *Hubungan Tingkat Pengetahuan tentang Kehamilan Risiko Tinggi dengan*

- Persiapan Persalinan pada Ibu Hamil Usia Remaja di Wilayah Kerja Puskesmas Bangsalsari Kabupaten Jember.*
- Schrader, P. G., & Lawless, K. A. (2004). The knowledge, attitudes, & behaviors approach how to evaluate performance and learning in complex environments. *Performance Improvement*, 43(9), 8–15.
- Simanjuntak, B. Y., Haya, M., Suryani, D., Khomsan, A., & Ahmad, C. A. (2019). Maternal knowledge, attitude, and practices about traditional food feeding with stunting and wasting of toddlers in farmer families. *Kesmas: Jurnal Kesehatan Masyarakat Nasional (National Public Health Journal)*, 14(2), 58–64.
- Singh, T., & Deepti, S. S. (2019). *Knowledge, attitude, practice and determining factors regarding nutrition during pregnancy among females of rural Punjab.*
- Sinha, B., Taneja, S., Chowdhury, R., Mazumder, S., Rongsen-Chandola, T., Upadhyay, R. P., Martinez, J., Bhandari, N., & Bhan, M. K. (2018). Low-birthweight infants born to short-stature mothers are at additional risk of stunting and poor growth velocity: Evidence from secondary data analyses. *Maternal & Child Nutrition*, 14(1), e12504.
- Sudargo, T., & Aristasari, T. (2018). *1000 hari pertama kehidupan.* UGM PRESS.
- Sugiyono. (2009). *Metode Penelitian Kualitatif dan Kuantitatif.* Alfabeta.
- Sunarsih, T., Dewi, D. A. K., & Putri, A. R. S. (2017). Hubungan Pengetahuan Ibu Hamil Tentang Program 1000 Hari Pertama Kehidupan Dengan Stimulasi Anak Dalam Kandungan. *Media Kesehatan Masyarakat Indonesia*, 19(1), 83–89.
- Titaley, C. R., Ariawan, I., Hapsari, D., Muasyaroh, A., & Dibley, M. J. (2019). Determinants of the stunting of children under two years old in Indonesia: a multilevel analysis of the 2013 Indonesia basic health survey. *Nutrients*, 11(5), 1106.
- Torlesse, H., Cronin, A. A., Sebayang, S. K., & Nandy, R. (2016). Determinants of stunting in Indonesian children: evidence from a cross-sectional survey indicate a prominent role for the water, sanitation and hygiene sector in stunting reduction. *BMC Public Health*, 16(1), 1–11.
- UNICEF. (2018). The Scaling Up Nutrition (SUN) Movement Annual Progress Report 2018. *Annual Progress Report 2018*, 1–200.
- Vir, S. C. (2016). Improving women's nutrition imperative for rapid reduction of childhood stunting in South Asia: coupling of nutrition specific interventions with nutrition sensitive measures essential. *Maternal & Child Nutrition*, 12, 72–90.
- Wahyuni, T. (2015). *Mentoring Sebagai Upaya Meningkatkan Pengetahuan Wus Tentang Gizi Seimbang 1000 Hari Pertama Kehidupan (1000 HPK)(Studi kasus di wilayah Kelurahan Purwoyoso Semarang).* Universitas Negeri Semarang.
- Wahyuningsih, F., Wahyuni, S., & Widiyanto, E. (2020). Implementation of the Bina Keluarga Balita Development Program: Efforts to Strengthen Parents' Ability in Caring for Children. *Journal of Nonformal Education*, 6(2), 176–184.
- Wemakor, A., & Mensah, K. A. (2016). Association between maternal depression and child stunting in Northern Ghana: a cross-sectional study. *BMC Public Health*, 16(1), 1–7.
- WHO. (2018). Reducing Stunting In Children: Equity considerations for achieving the Global Nutrition Targets 2025. In *Equity considerations for achieving the Global Nutrition Targets 2025.* <https://apps.who.int/iris/bitstream/handle/10665/260202/9789241513647-eng.pdf?sequence=1>
- Widy, U. S. (2014). Analisa pola makan ibu hamil dengan kondisi kurang energi kronik (kek) di kecamatan bobotsari, kabupaten purbalingga [skripsi]. *Yogyakarta: Universitas Negeri Yogyakarta.*
- Wirjatmadi, B., & Adriani, M. (2012). Pengantar gizi masyarakat. *Jakarta Kencana Prenada Media Gr.*
- Wong, K. L. M., Restrepo-Méndez, M. C., Barros, A. J. D., & Victora, C. G. (2017). Socioeconomic inequalities in skilled birth attendance and child stunting in selected low and middle income countries: Wealth quintiles or deciles? *PloS One*, 12(5), e0174823.
- Yusriani, & Alwi, M. K. (2018). *Buku ajar promosi kesehatan dan pemberdayaan masyarakat.* <https://forikes-ejournal.com/index.php/index/index>.
- Yusriani, M. K., & Nugroho, H. S. (2018). The effect of training on efforts to reduce maternal mortality risk to behavior of community-based safe motherhood promoters (SMPs). *Exec. Ed*, 9, 339.
- Yusriani, Y., & Acob, J. R. U. (2020). Education through WhatsApp Media in Changing of Smoking Behavior among Senior High School Students. *Kesmas: Jurnal Kesehatan Masyarakat Nasional (National Public Health Journal)*, 15(3).