Special Issue: The 2nd Bengkulu International Conference on Health (B-ICON 2022) 2023.18(1SP): 7–13
https://doi.org/10.20473/mgi.v18i1SP. 7–13

THE EFFECT OF NUTRITION EDUCATION ON KNOWLEDGE, ATTITUDES AND CONSUMPTION PATTERNS YOUNG WOMEN IN PREVENTION OF CHRONIC ENERGY DEFICIENCY IN BENGKULU CITY

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ABSTRACT

Adolescents is one of age groups vulnerable to nutritional status. Adolescence requires higher nutrition in order to optimize physical, cognitive and psychosocial growth. Lifestyle and diet of adolescents will affect the fulfillment of nutritional needs. Nutrition education can be carried out properly and can be received directly depending on how the message is conveyed, how the message is received and where the message is delivered. Barriers to prevention of chronic energy deficiency in adolescents can be sourced from environmental influences. Several studies The existence of significant changes in behavior in eating patterns through interventions from nutrition education can prevent Chronic Energy Deficiency (CED) in adolescents. This research aims to evaluate the impact of nutrition education on knowledge, attitudes and consumption patterns in prevention of CED in Young Girls SMPN 19 Padang Serai and SMKS Kampung Bahari, Bengkulu City. This study used quasi experiment with a two-group pre-test and post-test design. The intervention was carried out in the form of nutrition counseling using booklets or modules with a frequency of 3 meetings in 3 weeks. Nutrition education is promoting nutrition messages through education with a learning process using booklets individually and in groups using the lecture method. This study resulted an increased in knowledge, attitudes and consumption patterns after being given nutrition education in prevention of chronic energy deficiency of young women in Bengkulu City (p=0.000). There is an increase and influence between knowledge, attitudes and consumption patterns after being given adolescent nutrition education.

Keywords: *adolescents, nutrition education, knowledge, attitudes, consumption patterns*

INTRODUCTION

Nutrition has an important role for optimal growth, especially the development of the brain and intelligence which will ultimately affect the quality of human resources (Auliya and Budiono, 2015). Stunting occurs because of the pattern of feeding and not implementing a clean and healthy life. Inadequate nutritional intake, infectious diseases are very important factors in the stunting problem (Medhyna, 2019).

There are 117 countries that have complex nutritional problems in the form of stunting, wasting and overweight, Indonesia is ranked 17th. This is evidenced by the high prevalence of malnutrition (19.6%), stunting (37.2%) and the increasing problem of obesity in children under five (11.8%) (Riskesdas, 2013). Nutritional problems in children under five show a high prevalence based on the 2016 Indonesia Health Profile. The percentage prevalence of underweight in children under five in Indonesia is 19.3%, stunting is 27.6%, wasting 11, 1% and the tendency for toddlers to be overweight (overweight) 4.3% (Ministry of Health, 2017).

The problem of malnutrition in children stems from malnutrition during pregnancy which results in low cognitive abilities, the risk of stunting, and in adults the risk of suffering from chronic diseases (Rajagopalan S, 2003). The main causes of stunting include stunted growth in the womb, insufficient intake of nutrients to support rapid growth and development in infancy and childhood and frequent infections during early life (Vaktskjold et al., 2010). If not addressed, this condition will continue until the child grows into a teenager. (Kiki K, 2015).

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Adolescents are classified as vulnerable to nutritional problems because first, adolescents need higher nutrients due to increased physical, cognitive and psychosocial growth. Second, changes in adolescent lifestyle and eating habits will affect both their intake and nutritional needs. Third, adolescents who have special nutritional needs such as adolescents who are active in sports activities, are pregnant, suffer from chronic diseases, do excessive diets, are addicted to alcohol or drugs (Almatsier, 2010). To improve the eating habits of teenagers, nutrition education programs can be carried out by completing the necessary media so that the quality of a generation that is more productive and will give birth to quality children is obtained.

Research by Achmad, et al (2014) in Makassar found that more than half of the knowledge of adolescent nutrition was still lacking, namely 58.5% in 40 students of SMAN 10 and 53.1% of SMAN 16 Makassar. Likewise, Afdal's research in 2011 at SMPN 1 Sawahlunto found that 51.9% of students' nutritional knowledge was still lacking. To improve the nutritional intake and nutritional status of adolescents, among others, it is necessary to increase nutritional knowledge through nutrition education. Nutrition education efforts through counseling with pocket book media for a week to class XI SMA Semarang succeeded in increasing knowledge of nutrition and energy and protein intake (Sefaya, et al, 2017). The prevalence of iron nutritional anemia in adolescent girls in Bengkulu City is 43% and a poor diet is 79.25%. Interventions are needed in the form of nutritional counseling, reproductive health services, promoting balanced nutrition programs for adolescents in schools so that healthy eating patterns are achieved and the provision of healthy school canteens and nutrition education

Reinerhr et al (2003) conducted a study on providing nutrition education directly to both individuals and groups showing no significant difference in changes in body weight. Nutrition education can increase knowledge, awareness and behavior change to achieve optimal nutrition and health conditions (WKPG, 2012). Nutrition education for school children can be improved by collaborating with the education sector to formulate a nutrition curriculum according to the school level. Nutrition education in schools can be provided by teachers who have received training in nutrition education or given directly to nutrition officers. Nutrition education materials are arranged in local content subjects or other subjects which are extra-curricular activities at school (Riskesdas, 2010).

Nutrition counseling is carried out to increase understanding of nutrition, introduction to food diversity, food planning and diet. Efforts made in nutrition counseling can be carried out directly to individuals and groups or indirectly through mass media or electronic media such as pocket books, posters, leaflets, reading materials, videos and so on. The success of nutrition counseling directly depends on how the message is conveyed, the message is received and the place where the message is delivered. This can be seen from a significant change in eating behavior through the intervention of. The success of counseling can be seen by significant changes in dietary behavior after nutrition education is carried out (Nejad, Wertheim and Greenwood, 2005).

The prevalence of iron deficiency nemia in adolescent girls in Bengkulu City is 43% and a poor diet is 79.25%. It is necessary to carry out interventions in the form of nutritional counseling, reproductive health services, promote balanced nutrition programs for adolescents in schools so that healthy eating patterns are achieved and the provision of healthy school canteens and nutrition education. Consumption in the Prevention of Chronic Energy Deficiency of Young Women at SMPN 19 Padang Serai and SMKS Kampung Bahari, Bengkulu City.

Methods

The research method design used a quasi-experimental with one group pre-test and post-test design. The intervention was in the form of nutrition education using lecture and discussion methods using booklets or modules with a frequency of 3 meetings in 3 weeks. The population in this study were all students of class VIII and X, totaling 30 people for each intervention group, with a sample of 60 people selected based on cluster random sampling. The counseling material provided contains nutrition messages arranged in the form of educational

leaflets/modules. The material provided includes: Menu Planning Books, List of Substitute Food Ingredients and Types of ready-to-eat food and their ingredients found around the school. At the end of nutrition education, Post test with Food record sampling.

Results and Discussion

Table 1. Distribution of Characteristics of Young Women in Prevention of Chronic Energy Deficiency of Young Women at SMPN 19 Padang Serai and SMKS Kampung Bahari, Bengkulu City

Characteristics	Group 1		Group 2	
	N	%	N	%
Age				
> 15	16	53.3	7	23.3
< 15	14	46.7	23	76.7
Snack Money (Rp/Day)				
Rp 20,000	10	33.3	4	13.3
>Rp 20,000 – Rp 30,000	12	40.0	18	60.0
>Rp 30.000	8	26.7	8	26.7
Average pocket money (IDR)	12,588/day		2 3,822 /day	
Father's Job				
Private sector employee	3	10.0	0	0
Entrepreneur	14	46.7	14	46.7
Civil servant	7	23.3	10	33.3
Farmer/labor/fisherman	6	20.0	6	20.0
Mother's Job				
Private sector employees	5	16.7	1	3.3
Entrepreneur	4	13.3	14	46.7
Civil servant	5	16.7	9	30.3
Farmer/labor/fisherman	16	53.3	15	50.0
Parent's Income (IDR/ month)				
Rp 1,500,000	19	63.3	14	46.7
>Rp1,500,000-Rp5,000,000	10	33.3	14	46.7
>Rp 5,000,000	1	3.3	2	6.6
Average income/month (IDR)	3,111,111		3,833,333	

In Table 1, the results show that group 1 (Education booklet with individual assistance) is more than 15 years old as many as 14 students (46.7%) and 16 students (53.3%) are less than 15 years old. The percentage of respondents' age in group 2 (Education with booklets with group assistance) was the largest in the age category over 15 years, namely 23 students (76.6%). On average, respondents have pocket money of Rp. 13,888/day in group 1 and Rp. 23,822/day in group 2.

Based on the parents' occupation, the father's occupation is generally self-employed as much as 45.5% in group 1 and 33.3% in group 2. The mother's occupation is generally housewife as much as 53.3% in group 1 and 50.0% in group 2 The average income of parents in Group 1 is Rp. 3,111.11/month and group 2 is Rp. 3,833.333/ month.

Table 2. Average Pre-Test and Post-Test Scores of Adolescent Knowledge

Knowledge	mean	N	Standard Deviation	Standard Error	P-value
Group 1 Pre test	51.63	30	17,486	2,917	0 000
Post test	81.14	30	11,190	1,810	
Group 2 Pre test	45.63	30	16,233	3.017	0.000
Post test	87.19	30	10,890	1,210	

Based on table 2 the average knowledge in group 1 before education was 51.63 and after education the average increased to 81.14 and from statistical tests resulted in the influence of education with booklets through individual mentoring with a P value of 0.000. While the average knowledge in group 2 before education was 45.63 and after education increased on average to 87.19 and the results of statistical tests showed that there was an effect of education with booklets through individual mentoring with a P *value* 0.00.

Table 3. Average Pre-Test and Post-Test Values of Adolescent Consumption Patterns

Consumption Pattern	Mean	N	SD	SE	P-value
Group 1 Energy before	1600.5	30	360.7 8	2,717	0.002 _
Energy After	1767.2	30	1 8 1,190	1,810	
Group 2 Energy before	1698.0	30	1 16,233	0.017 _	0.0 07
Energy After	1890,9	30	8 0.890	1,210	
Group 1 Protein before	57.90	30	12,686	1.17 2	0 000
Protein before	64.89	30	12,686	2.417	
Group 2 Protein before	59.96	30	1.190	1.610	0.000
Protein After	68.63	30	6.233	1.17 0	

Based on table 3, the results showed that adolescents who were given nutrition education experienced an increase in consumption patterns

of both energy and protein in adolescents with group 1 education the average energy consumption pattern increased 166.5 kcal, protein 6.99 grams and in group 2 increased 192.9 kcal and 8.67 grams of protein.

Characteristics of Youth

Adolescents are a group at risk for nutritional problems due to increased nutritional needs for rapid growth and development. Adolescent lifestyle and eating patterns will affect their nutritional intake and needs and adolescents may need special nutrition if adolescents are active in sports activities, are pregnant, suffer from chronic diseases, diet excessively, are addicted to alcohol or drugs (Almatsier, 2010).

Adolescents aged 10-19 years are a group that is vulnerable to nutrition. This group is a group that is less concerned about nutrition problems so that more efforts are needed to improve health compared to children or the elderly.

The results showed that the amount of pocket money for individual nutrition education booklets was Rp 12,588/day and group nutrition education Rp 23,822/day. The habit of skipping breakfast contributes to the nutritional status of children. Parents are responsible for providing food that meets the child's nutrition, familiarizing children with breakfast at home, and giving their children pocket money of no more than Rp. 12,558 ± 23,822/day.

Children and adolescents who are accustomed to skipping breakfast have a 3 times higher risk of consuming snacks and have difficulty controlling their appetite so that it can lead to obesity (Kral, 2011). Moreover, 95% of children are given pocket money by their parents so that the possibility of buying street food is higher (Depkes RI, 2011). Lawrence Green in Notoatmodjo (2003) reveals that the consumption behavior of high-calorie food can affect the predisposing factors (knowledge and attitudes), environmental factor (parental busyness, social environment, and the amount of pocket money), and reinforcing factors (friend support and media promotion). . This study aims to analyze the relationship between the amount of pocket money and breakfast habits with more nutritional status of elementary school children.

The Effect of Nutrition Education on Knowledge in Prevention of Chronic Energy Deficiency in Young Women

Educational media is a tool that functions in explaining information in learning. Booklets are used as educational media, where teenagers are the target. By using booklet media, an individual and group approach to nutrition education is carried out. Creative media in delivering nutrition education to adolescents is proven to increase nutritional knowledge (Femyliati and Kurniasari, 2022). The process of nutrition education cannot be separated from the influence of the use of teaching aids or media that are able to support the ongoing educational activities. Educational media used in principle can be well received through the five senses. The more senses that are used, the more clarity the knowledge gained will be more stable. The eye is the five senses that transmit knowledge to the brain (approximately 75% to 87%), while the other five senses transmit human knowledge by 13% to 25%. (Maulana, 2009). One of the efforts to increase adolescent knowledge is through nutrition education. Nutrition education is very necessary to increase adolescent nutritional knowledge, form positive attitudes towards nutritious food in order to form good eating patterns and eating habits. The better the nutritional knowledge possessed by an individual, the more he will consider the type and quality of food that will be chosen for consumption. This awareness seems to be more evident in developed countries. Articles, newspapers, internet and booklets are media sources of information about nutrition that are positively related to consumption in adolescents.

The results showed that there was a change in the average knowledge of nutrition before and after booklet nutrition education, both in the group with individual and group mentoring. The results of a study conducted by Hermina and Sri (2017) using posters as a nutritional education tool for adolescents showed that there was an increase in knowledge. Use of other creative media (Maheasy & Siska, 2020) booklets which are arranged in an educative manner and have the advantage of complete, detailed, clear material that attracts the attention of teenagers according to their needs and conditions teenagers. In addition, booklets can also be taken home, so that subjects can read or

study them. Research using nutrition disc media in increasing adolescent knowledge about fruit and vegetable consumption shows that there is an increase in knowledge among good adolescents after intervention (Maheasy & Siska, 2020). Nutrition education using posters and pocket books has proven to be able to increase nutritional knowledge and attitudes in elementary school children after being given education for 3 months (Nuryanto, et al., 2014). Research (Nufaisah, Yuliantini and Darwis, 2019) shows that children's knowledge by providing nutrition education with picture card games and puzzle games has an effect on increasing knowledge.

According to Proverawati and Kusuma (2011), the ultimate goal of nutrition education given to adolescents is to change attitudes and actions towards awareness to fulfill nutritional needs so that their lives are healthy. In this study, the effect of nutritional education provided in addition to increasing knowledge has also been practiced in meeting energy and protein needs so that there is an increase in consumption patterns.

The Effect of Nutrition Education on Attitudes in Prevention of Chronic Energy Deficiency in Young Women

Nutrition education for adolescents through peer group support and training is a key factor that is effective through social media, audiovisual media, conventional media (Murdiningrum and Handayani, 2021). In line with the results of this study, educational media using booklets has an effect on knowledge. affect attitude. Nutrition education with booklets There are differences in the average knowledge and attitudes before and after using the individual and booklet approaches ($p < 0.05$) with the group approach. The ability of adolescents to choose preferences for certain foods is an attitude, belief, food and lifestyle that is determined by social conditions and the physical environment as well as the availability of food. Nutrition education media can be well received by teenagers (Safitri and Fitranti, 2016).

The results of the study found that there was an increase in the average attitude before and after nutrition counseling through booklets ($p < 0.05$) both in the individual group from 61.63 to 93.23 and in the group from 55.63 to 97.19. The average change in attitude is higher in the group approach. This is because some of the nutritional materials in the booklet related to adolescent nutritional problems, anthropometric measurement methods, nutrition education, adolescent nutrition management and menu cycles are applicable, that is, they can be practiced, demonstrated and role playing so as to attract the attention of teenagers to try.

Changes in the attitude of respondents after receiving health education and intervention with booklets have an effect on changing attitudes (Khasan. 2012). Other research shows that educational media that affects knowledge is lectures, while booklet media has an effect on attitudes. There is a difference in the average knowledge and attitude after being given nutrition education to the group through lectures and booklets ($p<0.05$) (Safitri and Fitranti, 2016).

The Effect of Nutrition Education on Consumption Patterns in Preventing Chronic Energy Deficiency in Young Women

The growth and development of adolescents is strongly influenced by the intake of food consumed. Physical growth causes adolescents to require greater nutritional intake compared to childhood. The results showed that the sample with good intake levels before and after nutrition education booklet in the individual approach group increased, namely energy from 160.5 kcal to 1767.2 kcal, protein from 57.90 grams to 64.89 grams. While the sample that has a good level of intake after nutrition education booklet with a group approach is energy from 1698.0 kcal to 1890,9 kcal and protein from 59.96 to 68.63 grams. Energy needs for adolescent girls according to the RDA is 2125 kcal and 69 grams of protein. The results of the study had an effect and protein energy intake increased after being given counseling but the average results still did not meet the RDA. In line with Pakhri's research, he found that there was an effect of nutrition education on energy and protein intake after the intervention with a p value = 0.005 (Pakhri, Sukmawati and Nurhasanah, 2018). Research (Sekti and Fayasari, 2019) showed an increase in knowledge and consumption of fruits and vegetables after intervention in the lecture group and combination group.

This is because the treatment given is in the form of nutrition education with material on adolescent nutrition problems and efforts to fulfill energy needs, adolescents' protein has been successfully understood by them. The use of booklet media helps understanding the material given. As stated by Notoatmodjo (2007), the method of nutrition education can be done in various ways, one of which is the method of individual and group education through lectures and discussions, by providing intensive health education and assisted by the media to produce changes and increase knowledge in individuals, as well as groups. .

Another study by Hatta (2014) regarding the description of energy and protein intake and nutritional status in SMP Negeri 35 Makassar students showed that there were 76.7% and 63.3% of students have insufficient energy and protein intake. This is supported by research by Novitasari (2014) on adolescents in Surakarta City which shows that 43.5% of students have less protein intake, and 73.9% of students have less iron consumption. Research Hendrayati, et al,

Protein is a source of nutrients needed for growth and body building. Protein is obtained from food ingredients, both animal and vegetable side dishes. Animal protein sources such as chicken, eggs and fish are preferred. Animal protein is preferred over vegetable protein. Adequate protein consumption will improve the nutritional status of children (Adelwais, 2017).

The nutrition education model is an alternative in providing nutrition education which is the main attraction for children or adolescents. Providing nutrition education can increase knowledge and intake of macronutrients. (Kamsiah, Yuliantini and Yunianto, 2020).

Conclusion

There is an increase in knowledge and attitude and consumption patterns after being given nutrition education in the prevention of Chronic Energy Deficiency in Young Women in Bengkulu City. There is an Influence of Nutrition Education on Knowledge, Attitudes and Consumption Patterns in Prevention of Chronic Energy Deficiency in Young Women in Bengkulu City

Acknowledgement

For further research to increase knowledge and insight by applying the knowledge obtained so that they can understand the balanced nutrition of adolescents in society, especially nutritional problems in adolescents

Reference

Almatsier, S. (2009). *Basic Principles of Nutrition Science* . Jakarta.PT. Main Library Gramedia.

Almatsier, Sunita. (2010). Basic Principles of Nutrition Science. Jakarta: PT. Gramedia Main library

Ardiyanto, A. *et al.* (2020) 'Analysis of Clean Living Behavior and Physical Fitness Status in the Era of the Covid-19 Pandemic PGSD Lecturers', *Sport Window* , 5(2), pp. 131–140. doi:10.26877/jo.v5i2.6216.

Auliya, C. and Budiono, I. (2015) 'Profile of the Nutritional Status of Toddlers in terms of the Topography of the Residential Area (Study in the Coastal and Ridge Regions of Jepara Regency)', *Unnes Journal of Public Health.* , 4(2), pp. 108–116. doi:10.15294/ujph.v4i2.5739.

Indonesian Ministry of Health. (2011). Food and Nutrition Information Network Edition II. Jakarta: Ministry of Health RI

Duren, KP (2018) 'influence Of Nutritional Education On Knowledge And Practices Of Prospective Mothers In Prevention Of Chronic Energy Lack Of Pregnant MotherS (Study on Newlywed Bride and Groom in the Work Area of Duren Health Center, Bandungan, Semarang)', *Journal of Public Health (e-Journal)* , 6(5), pp. 370–377.

Elmika, R., Simbolon, D. and Yuliantini, E. (2018) 'Nutrition Education with CAMIL is as Effective as Leaflets in Anemia Prevention Behavior in Pregnant Women', *Journal of Health Science and Technology* , 6(1),pp.82–93. doi:10.32668/jitek.v6i1.114.

Femyliati, R. and Kurniasari, R. (2022) 'utilization Of Creative Media For Nutrition Education In Youth (Literature Review) Rahmanita Femyliati 1 , Ratih Kurniasari 2 1', 10(1), pp. 16–22.

Friska, Mellyasari, Mufliha Isnawati. (2014). *Risk Factors for Stunting in Toddlers Age 12 Months in Purwokerto Village, Patebon District, Kendal Regency. Scientific Article* , Diponegoro University

Kamsiah, Yuliantini, E. and Yunianto, AE (2020) 'Nutritional education model through crossword

puzzles toward knowledge and macro nutrient intake of primary school students in Bengkulu City', *Systematic Reviews in Pharmacy* , 11(10), pp. 722–725. doi: 10.31838/srp.2020.10.107. Typical. Criteria for Reading Children and Adolescents in Libraries.2012

Maulana, H. Health promotion. Jakarta: EGC ; 2009.

Marfuah, Dewi and Kusudaryati, Dewi Pertiwi Dyah. (2016). Effectiveness of Education on Improvement of Iron Intake in Young Women. Journal. Volume 14 (1). S1 Nutrition Science Study Program STIKES PKU Muhammadiyah Surakarta

Medhyna, V. (2019) 'Factors Affecting Stunting Incidents in Toddlers at the Biaro Health Center, Agam Regency in 2018', *Maternal Child Health Care* , 1(2), p. 18. doi:10.32883/mchc.v1i2.535.

Food Nutrition Media, Vol IX, Ed 1, Jan-June 2010. P33-40

Murdiningrum, S. and Handayani, H. (2021) 'The Effectiveness of Nutrition Education Media for Increasing Adolescent Nutrition Knowledge', *An-Nur BK Student Journal: Different, Meaningful,Noble*,7(3),p.53. doi:10.31602/jmbkan.v7i3.5759.

Nejad, LM, Wertheim, EH and Greenwood, K. (2005) 'Comparison of the Health Belief Model and the Theory of Planned Behavior in the Prediction of Dieting and Fasting Behavior', *E-Journal of Applied Psychology*,1(1),pp.63–74. doi:10.7790/ejap.v1i1.10.

Notoatmodjo, Soekidjo. (2007). Public Health Sciences And Arts. Jakarta: PT. Rineka Cipta

Nufaisah, A., Yuliantini, E. and Darwis, D. (2019) 'The Effect of Balanced Nutrition Education with Picture Card Games and Puzzles on Knowledge of Children at Madrasah Ibtidaiyah Negeri 2 Bengkulu City in 2019', *Al Fitrah: Journal Of Early Childhood Islamic Education* , 3(1),p.1. doi:10.29300/alfitrah.v3i1.2279.\

Nurmasyita, N., Widjanarko, B. and Margawati, A. (2016) 'The effect of nutrition education interventions on increasing nutritional knowledge, changes in nutrient intake and body mass index of overweight adolescents', *Indonesian Journal of Nutrition (The Indonesian Journal of Nutrition))* , 4(1), pp. 38–47. doi: 10.14710/jgi.4.1.38-47.

Pakhri, A., Sukmawati and Nurhasanah (2018) 'Effect of education on knowledge of nutrition knowledge and Energy, Protein and Iron Intake in Adolescents', *Department of Nutrition, Health Polytechnic of the Ministry of Health Makassar ABSTRACK* , pp. 39–43.

Reinehr, T. *et al.* (2003) 'Long-term follow-up of overweight children: After training, after a single consultation session, and without treatment', *Journal of Pediatric Gastroenterology and Nutrition* , 37(1),pp.72–74.doi: 10.1097/00005176-200307000-00013.

Safitri, NRD and Fitranti, DY (2016) 'The Effect of Nutrition Education with Lectures and Booklets on Increasing Nutritional Knowledge and AttitudesofOverweight Adolescents', *Journal of Nutrition* , 5(4), pp. 374–380.

Sekti, RM and Fayasari, A. (2019) 'Nutrition Education with Audiovisual Media on Fruit and Consumption of Junior School Students in East Jakarta', *Scientific Journal of Health (JIKA)* , 1(2),pp. 77–88. doi:10.36590/if.v1i2.15.

Sungkowo, S., Setiawan, B. and Madanijah, S. (2008) 'Food and Nutrition Knowledge Enrichment Interventions on Local Content for Junior High Schools in West Lampung Regency', *Journal of Nutrition and Food* , 3(3), p. 156. doi:10.25182/jgp.2008.3.3.156-166.

Suryani, D., Hafiani, R. and Junita, R. (2017) 'Analysis of Diet and Iron Nutrient Anemia in Bengkulu City Adolescent Girls', *Andalas Public Health Journal,*10(1),p.11. doi:10.24893/jkma.v10i1.157.\\

Vaktskjold, A. *et al.* (2010) 'Stunted growth in a cohort of two-year olds in the Khanh Hoa province in Vietnam - a follow-up study.', *Journal of Rural and Tropical Public Health* , 9, pp. 77–81.

Waryana. Reproductive Nutrition. Yogyakarta: Rahima Library; 2010.