



## KNOWLEDGE AND ATTITUDE STUDENTS THROUGH NUTRITION HEALTH EDUCATION WITH E-MODUL “AGAINST STUNTING”

Adriyani Adam<sup>1\*</sup>, Aswita Amir<sup>1</sup>, Dinul Islam<sup>1</sup>, Ali Imran<sup>2</sup>

<sup>1</sup>Nutrition Department, Poltekkes Kemenkes Makassar, Jl. Paccerrakkang No.14, Paccerrakkang, Biringkanaya, Makassar City, South Sulawesi 90241, Indonesia

<sup>2</sup>Public Health Faculty, Universitas Pejuang Republik Indonesia, No., Jl. G. Bawakaraeng No.146, Lariang Bangi, Kec. Makassar, Kota Makassar, South Sulawesi 90151, Indonesia

\*[adriyani@poltekkes-mks.ac.id](mailto:adriyani@poltekkes-mks.ac.id)

### ABSTRACT

Stunting in Indonesia is a very serious problem because the percentage is above form cut off point of World Health Organization is only 20%. The results of South East Asia Nutritions Surveys (SEANUTS), around 24.1% of boys and 24.3% of girls in Indonesia are stunted. Based on Basic Health Research (2018), the incidence of stunting among children under five in South Sulawesi is still high, which is above 30% and South Sulawesi is the fourth highest in Indonesia. One of the preventive efforts to reduce stunting from an early age by nutrition health education through developing an electronic module about stunting as a method of nutrition health education which contains information about stunting. The purpose of this study was to determine the effect of nutrition health education on students' knowledge and attitudes through the development of the E-Module "Against Stunting" at SMU Negeri 1 Makassar City. The research method used is a Quasi Experiment, with a total sample of 64 students based on inclusion and exclusion criteria and then divided into the intervention group and the control group. Before the intervention, a pre-test was carried out on the two groups, then students in the intervention group were given nutrition education through an e-module containing knowledge about stunting, its causes and prevention continuously every week and at the end, a post test was carried out on the intervention group and the control group. The data collected were analyzed using the Man Whitney test. The results showed that there was an effect of nutrition health education on increasing the knowledge and attitudes of students at SMU Negeri 1 Makassar City.

**Keywords:** e-modul; stunting; nutrition health education

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## INTRODUCTION

Knowledge of stunting plays an important role in determining the degree of public health. Various nutritional and health problems can occur due to lack of knowledge about balanced nutrition. One of the health problems that occur such as stunting due to lack of understanding in the prevention of stunting so that there is an imbalance of food intake. This can occur in various age groups, not least in pregnant women and school age children (AUS) (Almatsier, Soetardjo, & Soekarti, 2011). According to FAO and WHO, in order to achieve optimal health and nutritional status, there are needs to be balanced nutrition guidelines in each country, however, socialization and application of balanced nutrition in the community in fact have not progressed optimally as said by Soekirman (2011) in Arimurti (2012) that in 2003 and 2005 the Ministry of Health has issued a book on balanced nutrition guidelines but still

lacks socialization and publication on this subject so as to make People are less familiar with balanced nutrition guidelines.

The low knowledge of children about balanced nutrition can be seen based on several studies that have been done before. Some of these studies were conducted by Achadi, et al (2010) in Arimurti, (2012) on elementary school children in Depok city who showed that the average knowledge score was 67.81 points. Research conducted by Atmaja (2010) in urban and rural areas of Banten showed an average nutritional knowledge score of school-age children of 69.57 points and 70.65 points, among others. This shows that the knowledge of child nutrition in some areas of Indonesia is still relatively low.

Nutrition education cannot be separated from the media because through the media, the messages conveyed can be more interesting and understood, so that the target can learn the message so that he decides to adopt positive behavior (Notoatmodjo, 2010). Media groupings based on technological developments are divided into print, audiovisual, and computer media. Audiovisual is one of the media that convey information or messages audiolly and visually. Audiovisual media has two elements that each have a power that will synergize into a great force. This medium provides a stimulus to hearing and vision, so that the results obtained are more maximal. These results can be achieved because the senses that channel the most knowledge to the brain are the eyes (approximately 75% to 87%) while 13% to 25% of knowledge is obtained or channeled through other senses (Maulana, 2009 in Kapti, 2010).

Based on Sadiman, et al, in Kapti, (2010) Audiovisual media has the advantages of providing a more real picture and improving memory retention because it is more interesting and memorable. Research Rahmawati, et al (2007) mentioned that knowledge and attitudes improved significantly after being given intervention in the form of audiovisual media because in audiovisual media respondents can see images. The E-Module Development Model "Against Stunting" is a method that informs about stunting in the form of understanding, causes, signs and symptoms and prevention given to young women. This method is carried out on young women in High School in Makassar City then given information about stunting by using E-Modules in digital form. Based on the above explanation, researchers decided to measure the level of knowledge and attitudes by using audiovisual media to make it easier to understand material about stunting prevention. Based on this background, the purpose of this study is to analyze the influence of nutrition health education through E-Module "Against Stunting" on the knowledge and attitudes of SMU Negeri 1 Makassar City Students in 2020.

## **METHODS**

The type of research used is Quasi Eksperiment research, which is research by intervening (treatment) on research subjects to find out the results of changes after being treated by the intervention (Notoatmodjo, 2012). The design of the study used is to use pretest-postest group design, where the study has been made the first observation (pre-test) so that researchers can test the changes that occur by giving questionnaires to respondents (post-test) after the intervention by giving e-modules, with a control group (comparison). This study was conducted at SMU Negeri 1 Makassar City with a sample number of 32 students in the treatment group and 32 students in the control group based on the lemeshow formula and taken based on inclusion and exclusion criteria.

This research activity lasts effectively for 4 weeks. In the first week, respondents in the intervention group and the control group will be given a pre test and then continued with the

provision of socialization about the implementation of research. This activity takes place through a zoom meeting media. In the second week the intervention group began to be given e-module 1 which contained a general explanation of stunting. Then the third week of e-module 2 which contains about the causes of stunting and e-module 3 which contains about the prevention of stunting. Every day continuously respondents in the intervention group will get information based on the type of e-module that has been prepared, and at the end of the session or the fourth week of respondents in both groups both interventions and controls will be given psot test as a form of final evaluation of nutrition education. Pre and post test results data are processed and analyzed with the stages of the data normality test and the Wilcoxon test. This study has been get recommendations for approval of ethics from health research ethics committee Health Polytechnic Makassar No. : 00117 /KEPK-PTKMKS/ III /2020.

**RESULTS**

Table. 1  
Distribution Based on Respondent Characteristics

Characteristics of Respondents	Treatment		Control	
	f	%	f	%
<b>Gender</b>				
Man - Man	21	65,6	14	43,8
Woman	11	34,4	18	56,3
<b>Father's Job</b>				
ASN	4	12,5	10	31,3
Private	28	87,5	22	68,8
<b>Mother's Work</b>				
ASN	4	12,5	3	9,4
Private	5	15,6	8	25
IRT	23	71,9	21	65,6
<b>Father's Education</b>				
SMU	13	40,6	9	28,1
D3	0	0	5	15,6
S1	13	40,6	7	21,9
S2	2	6,3	3	9,4
Other	4	25	8	25
<b>Mother's Education</b>				
SMU	10	31,3	26	40,6
D3	1	3,1	2	6,3
S1	11	34,4	4	21,5
S2	3	9,4	3	9,4
Other	7	21,9	6	18,8

Table 1 above showed that the characteristics of respondents by gender in the treatment group were higher in the male sex =male (65.6%) while in the control group more high in female sex (56.3%). For parental work both the treatment group and the control group, it was higher in the work group in the private sector for fathers and in the IRT group for maternal work. For the education of parents both the treatment group and the control group are higher at the level of S1 Education both father and mother.

Table 2.  
Distribution of Respondents Based on Knowledge Variables between The Treatment Group and the Control Group

Knowledge Variables	N	Mean	SD	Min	Max	P
P_Before	64	13.70	2.209	12	20	0.000
P_After	64	13.88	3.861	12	24	

\*Wilcoxon Test

Tabel 2, it shows the mean rank value between the treatment group given nutrition health education through e-module of 13.70 (before) and the control group of 13.88 (after). The results showed differences in the mean rank value between the treatment group and the control group as well as the minimum and maximum values of pre and post test results. While the output in the table obtained the wilcoxon test result, the value  $p = 0.000$  is less than 0.05, then  $H_0$  is rejected. The conclusion of this study is that there is an influence on the provision of nutrition health education through e-modules on respondents' knowledge.

Table 3.  
Distribution of Respondents Based on Attitude Variables between The Treatment Group and the Control Group

Attitude Variables	N	Mean	SD	Min	Max	P
S_Before	64	13.88	2.320	12	20	0.000
S_After	64	16.61	3.225	12	24	

\*Wilcoxon Test

Based on tabel 3, showed the mean rank variable attitude between the treatment group given nutrition health education through e-module of 13.88 (before) and the control group of 16.61 (after). The results showed differences in the mean rank value between the treatment group and the control group as well as the minimum and maximum values of pre and post test results. While the output in the table obtained the wilcoxon test result, the value  $p = 0.000$  is less than 0.05, then  $H_0$  is rejected. The conclusion of this study shows that there is an influence of nutrition health education through e-modules on respondents' attitudes.

## DISCUSSION

The results showed that there was a difference average from knowledge before and after intervention. The results of pre-test before the intervention was carried out, there were no differences in knowledge and attitudes of the respondents, both intervention group and the control. While the post test results have shown a significant difference between intervention group and control group. The results of statistical analysis using Mann Whitney Test, showed that there was a significant difference after intervention between knowledge and attitude variable with  $p < 0.05$ . This shows that the provision of nutrition education media in increasing students knowledge and attitudes that has been given via android every week was very effective in increasing students knowledge about stunting. This could be to the wider access to information. Although the percentage of samples that have never received nutrition counseling, information about stunting can be obtained in various media, so that this factor is one of the factors that influence the results of the study.

Respondents attitudes showed an average increase in attitudes after treatment as well as the results of statistical analysis showed that there were differences in good attitudes after the

intervention. These results are in accordance with research conducted by (Maryati, 2016) that nutrition education interventions three times per week at posyandu can increase knowledge scores and feeding practices of mothers with stunting toddlers. The group that received the intervention using the food sample media had a higher score increase in knowledge and feeding practice. The increase in knowledge after the intervention statistically means that the respondents understand the material and are able to absorb the material given at the time of treatment. This is in accordance with the opinion which states that the respondent has stored the knowledge given at the time of treatment (Putri, 2017). Another suitable research result is the effect of health education with audio-visual methods on how to care for babies on changes in the behavior of primiparous mothers in caring for newborns. This research was conducted by playing the video once and using a one group pre test post test design. The results showed that there were changes in the knowledge, attitudes and skills of mothers before and after being given counseling.

Based on the results of the study (wade, 2017) a significant value was obtained in the pretest and posttest of knowledge conducted through the MSG program. So it can be concluded that there are differences in the knowledge of the mother's pretest and posttest scores. These significant results indicate that in the mother group there was a significant change in mother's knowledge about stunting prevention after attending health education through the Mother Smart Grounding (MSG) program. The increase in knowledge occurred to the willingness in the mother to follow and find out the benefits of these activities, besides the learning media used provided motivation and psychological influence for the respondents. Attractive media will give confidence to respondents so that cognitive, affective, and psychomotor changes can be achieved optimally. These findings are in accordance with Budiman's opinion that the level of knowledge is influenced by the level of education, information, and length of work. Seeing that the education level of the mothers is mostly SMA/SMK, most of them have good knowledge.

Differences in mother's attitude are also shown by the ranking of the minimum score and maximum score on the pre-test and post-test. One of the factors that influence the formation of attitudes is personal experience. To be able to form the basis of attitude formation, personal experience must leave a strong impression. Therefore, attitudes will be more easily formed if the personal experience involves emotional factors. The influence of others is considered important and quite influential. In general, individuals are conformist or in line with the attitudes of those they consider important. This tendency is motivated, among others, by the desire for affiliation and the desire to avoid conflict with the person who is considered important. Personal experiences and influences from other people who are considered important, indicate an increase in student attitudes to the knowledge gained is able to bring up understanding and confidence in their needs as students who also have to make efforts to prevent stunting before entering the next pregnancy period or at 1000 days. first life. In addition, the support of the e-module used in this study became reading material not only to increase knowledge but also to influence students attitudes.

The results of this study are in line with Kartikawati's research which shows that there is a significant difference in the attitudes of respondents who are given health education with mothers' classes regarding toddler care in the Sukarasa Health Center Work Area, Bandung City. In determining a complete attitude, knowledge, thoughts, beliefs and emotions play an important role. According to Priyoto, attitude refers to an individual's evaluation of various aspects of the social world and how that evaluation raises the individual's liking or disliking of issues or ideas of other people, social groups and objects. Attitude is the result of

consideration of the advantages and disadvantages of the behavior in question. Meanwhile, in this study, the researcher is not one of the groups of people who are considered important, but the roles of trusted people in the environment where the mother lives, people who have a higher social status, peers, close friends, and friends work. So that there are still some mothers who are rather difficult to receive the health education provided by researchers.

## CONCLUSION

Based on the results of research that has been done, it can be concluded as follows there is an influence on the provision of nutrition health education through e-modules on the knowledge and attitude of students of SMU Negeri 1 Makassar City about stunting prevention. For the next research, can conducted study efficacy of the utilization of e-module media to improved consumption patterns and nutritional status in order to prevent *stunting*.

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