ISSN Printed Version: 2549-4341
ISSN Online Version: 2549-418X
ABDIMAS TALENTA 6 (2) 2021: 467-470 http://abdimas.usu.ac.id

A Nutrition Education for Productive Aged Women to Improve Knowledge in Preventing Stunting in Indonesia

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Abstract

Background: stunting is one of the double burden health problem in Indonesia and the education during the first 1000 days of life is the most important determining factor. The aim of this study was to improve knowledge in preventing stunting. Methods: 50 women aged 19–59 years were giving a questionnaires before and after nutrition education has been performed. The effect of nutrition education was analyzed using Wilcoxon test. Results: there was a significant change of median score between pretest and posttest ($p < 0.05$). Conclusion: Nutrition education was successful in improving knowledge of productive aged women in reducing stunting.

Keywords: Nutrition, Education, Productive Aged, Stunting

1. INTRODUCTION

Stunting still become one of health problems in Indonesia with a high prevalence. Stunting is caused by prolonged lack of nutritional intake during the first 1000 days of life. (Kemenkes RI, 2018) This failure to thrive condition is come not only from nutritional factor but also the occurrence of repeated infections. Both of these factors are influenced by inadequate parenting. Stunting affects brain growth and development. Stunted children also have a higher risk of developing chronic diseases in adulthood.

Prevention of stunting is by a good nutritional intake during pregnancy, giving exclusive breast feeding for the first 6 months, and continued with appropriate complementary foods until the child is 2 years old. However, the role of health workers in providing knowledge about the nutrition during the first 1000 days of life, including maternal nutrition during pregnancy and child nutrition is still inadequate. Based on these issues, we conduct a study in order to improve mother's knowledge about nutrition in preventing stunting through nutritional education.

2. METHODS

Study setting and sample

The study was performed at Desa Telagah, North Sumatera Province, Indonesia. After ethical clearance had been obtained from the Ethical Committee of the Faculty of Medicine, University of Sumatera Utara, the study was conducted among women, aged 19–59 years old. A productive aged woman that eligible to be included in the study was been obtained to sign the informed consent.

Study design

A questionnaire was administered to the subjects to obtain their level of nutrition-related knowledge. The questionnaire aimed to assess the knowledge of mothers regarding feeding recommendations during the first 1000 days of life and malnutrition screening using anthropometry assessment. The questions were based on a scientific literature and were performed as multiple choice questions. The

nutrition-related knowledge questions are shown in Table 1. The total of correct answer was given a score 10 out of 10. The total score of each respondent was calculated to provide a measure of the preintervention level of nutrition-related knowledge. The level of nutrition-related knowledge was classified into low, moderate and high. The characteristic infromation about demographic and socioeconomic data of the repondents was collected at admission. The same questionnaire was administered to assess the level of nutrition-related knowledge after the intervention. The intervention was given the nutrition education about nutrition recommendation during the first 1000 days of life, the use and the guidance in performing anthropometry assessment.

Data analysis

Data were entered and analyzed using the Statistical Package for the Social Science (SPSS) version 20.0. The numeric data were checked for normality by using Kolmogorov-Smirnov test. Means ± SD were presented for normally distibuted data, and the median values with minimum and maximum values were presented for not normally distributed data. The t-dependent test were perfomed for bivariate analysis of mean values and the median values were assessed using Wilcoxon test were for bivariate analysis.

3. RESULTS AND DISCUSSION

Fifty women were recruited in the study. There was no loss of participants during the study, all respondents complied with the education program. The age, occupation, educational level, ethnic and nutritonal status were collected at admission (Table 3.2 and 3.3).

Table 3.1. Characteristic subjects based on demographic and socioeconomic

Variable	(n=50)
Age, years old	32 (20–59)
Ethnic, n (%)	
Bataknese	5 (10.0)
Javanese	9 (18.0)
Karonese	36 (72.0)
Educational level n (%)	
Informal education	2 (4.0)
Elementary graduated	8 (16.0)
Junior high graduated	12 (24.0)
Senior high graduated	24 (48.0)
Diploma graduated	2 (4.0)
Bachelor graduated	2 (4.0)
Occupation, n (%)	
Housewives	25 (50.0)
Honorary employee	1 (2.0)
Farmer	20 (40.0)
Civil servant	1 (2.0)
Enterpreuner	3 (6.0)

Table 3.2. Characteristic subjects based on nutritional status

Variable	(n=50)
Height, cm	151.6 ± 6.5
Weight, kg	62.3 ± 14.2
BMI, kg/m^2	27.0 ± 5.3
Waist circumference, cm	85.5 ± 13.3
Nutritional status, n (%)	
Normal	13 (26.0)
Overweight	10 (20.0)
Obesity I	11 (22.0)
Obesity II	16 (32.0)

The pre- and posttest scores for nutrition-related knowledge are presented in Table 3.4 and 3.5. There was a significant improvement in nutrition-related knowledge before and after intervention ($p < 0.05$).

Table 3.3. Total scores of the multiple choice questionnaire

Variable	Total scores (n=50)	P value
Pretest	4 (0–9)	**0.000**[1]
Posttest	7 (4–10)	

[1]: Wilcoxon test

Table 3.4. Nutrition-related knowledge level

Variable	Pretest (n=50)	Posttest (n=50)
Poor, n(%)	13 (26.0)	0 (0.0)
Moderate, n(%)	24 (48.0)	9 (18.0)
Good, n(%)	13 (26.0)	41 (82.0)

4. DISCUSSION

The setting of this study was an urban population in Kabupaten Langkat, Indonesia. The participants of this study were productive aged women (19–59 y.o) with median age was 32 y.o, minimum and maximum value were 20 and 59 y.o. The majority of subjects' ethnicity was Karonese. Mostly, the subjects' occupation was housewives with senior high garduated. 32% of the subjects was obesity grade II with mean body mass index (BMI) of respondents was 27,0, mean weight was 62,3 kg, mean height was 151,6 cm, and mean waist circumference was 85.5 cm.

There are many definitions for nutrition education. According to ADA 2011, nutrition education is defined as instruction or training intended to lead to acquired nutrition-related knowledge and/or nutrition-related skills and be provided in individual. Moreover, nutrition education helps individuals, families, and communities make informed choices about food and lifestyles that support physiological health, economic, and social well-being according to USDA 2012. The definition of nutrition education based on Ministere d'Education Nationale 2013 is all communication activities aiming at the voluntary modification of practices that have an incidence on population nutritional state, in order to improve it. The main purpose of nutrition education is health promotion to improve the knowledge thereby prevent stunting in particular for this study.

One of nutrition education method is counseling. The intervention of this study was counseling which about the measurements of anthropometric and the nutrition education of the first 1000 days of life. Pre and post counseling questionnaire were given to assess the knowledge of the subjects.

There was a significant improvement in nutrition-related knowledge before and after counseling (Table 3.3) with p value <0.05. There was also improvement based on knowledge level (Table 4) that was divided into 3 groups (poor, moderate, good). The counseling was chosen because it could embrace more people and saving time and cost, so it was more effective and efficience. There was also demonstration about anthropometric measurements of children and adult. The measurements are important because they represent nutritional status.

5. CONCLUSION

Nutrition education had significantly positive effect on nutrition-related knowledge of productive aged women in preventing stunting. These findings are based on a short periode of intervention, about one time intervention.

6. ACKNOWLEDGEMENTS

The authors graftefully acknowledge Lembaga Pengabdian pada Masyarakat University of Sumatera Utara Indonesia for the financial support with contract No. 258/UN5.2.3.2.1/PPM/2020. The authors are also greatly thanked for Sri Amelia, Lokot Donna Lubis as the team members of this Pengabdian Masyarakat, the cooperation of all voluntary workers in this study in Desa Telagah Langkat. All authors declare no conflict of interest for this study.

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