

# Influence of Scaling Up Nutrition Education towards Knowledge and Attitude of Students at Santa Elisabeth Medan School of Health Sciences

## Pengaruh Pendidikan 1.000 Hari Pertama Kehidupan terhadap Pengetahuan dan Sikap Mahasiswi Sekolah Tinggi Ilmu Kesehatan Santa Elisabeth Medan

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### Abstract

Marriage at young age and lack of knowledge in parenting are among the causes of nutrition problem. The students in Santa Elisabeth Medan School of Health Sciences were found less knowledgeable about it. This study aimed to analyze the influence of Scaling Up Nutrition (SUN) education towards knowledge and attitude of students at Santa Elisabeth Medan School of Health Sciences 2016. This study was quasi experimental with one group pre-test and post-test design. The population was students of the Santa Elisabeth Medan School of Health Sciences. Sampling was done by purposive sampling method, which consisted of 115 students at third level of Diploma III in Midwifery. Education class was conducted four times within two weeks by using lecture and discussion methods. This study used visual media (slides) and module. The influence of education towards students' knowledge and attitude was analyzed by paired sample t-test ( $p$  value = 0.05). The results showed that only 1.7% students had high knowledge and 45.2% students had unfavorable attitudes. After nutrition education, there were 85.2% students who had high knowledge and 100% students had favorable attitudes. In conclusion, there are significant differences between students' knowledge and attitude after SUN education given.

**Keywords:** Education, scaling up nutrition, students' knowledge and attitude

### Abstrak

Tingginya angka pernikahan pada usia remaja yang disertai dengan rendahnya pengetahuan tentang pola asuh merupakan salah satu pemicu terjadinya masalah gizi. Remaja merupakan orang tua masa depan. Tujuan penelitian ini untuk mengetahui pengaruh pendidikan 1.000 hari pertama kehidupan terhadap pengetahuan dan sikap mahasiswa Sekolah Tinggi Ilmu Kesehatan Santa Elisabeth Medan tahun 2016. Penelitian ini menggunakan kuasi eksperimental dengan desain *one group pre- dan post test*. Metode pengambilan sampel dengan metode *purposive sampling* sebanyak 115 mahasiswa tingkat III program studi Diploma III Kebidanan. Pendidikan dilakukan di kelas sebanyak 4 kali dalam 2 minggu dengan menggunakan metode mengajar dan diskusi. Penelitian ini menggunakan media visual (*slides*) dan modul. Pengaruh pendidikan terhadap pengetahuan dan sikap dianalisis dengan uji *paired sample t-test* (nilai  $p = 0,05$ ). Hasil penelitian ini menunjukkan bahwa 1,7% mahasiswa memiliki pengetahuan baik dan 45,2% sikap tidak mendukung. Setelah pendidikan kesehatan, terdapat 85,2% mahasiswa memiliki pengetahuan yang baik dan 100% mahasiswa memiliki sikap yang mendukung. Dapat disimpulkan bahwa terdapat perbedaan secara signifikan antara pengetahuan dan sikap mahasiswa setelah diberikan pendidikan 1000 hari pertama kehidupan.

**Kata kunci:** Pendidikan, 1.000 hari pertama kehidupan, pengetahuan dan sikap mahasiswa

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## Introduction

Long-term vision in national development plan 2005-2025 developed Indonesia, fair and prosperous country. To achieve that vision, the strategy include behavioral and community independence, professionalism of health human resources, as well as promotive and preventive efforts without neglecting curative and rehabilitative. Indonesia will be fair country if everyone can get health services whether promotive, preventive, curative or rehabilitative.<sup>1</sup>

One of factors that influence the development is the availability of human resources. The availability of qualified human resources cannot be separated from the role of nutrition. Nutrition is needed for growth and development since in the womb. Nutrition needs to be organized during pregnancy until the baby is two years old, which is known as the first 1,000 days of life. Period of the first 1,000 days of life is the period that determines the quality of life, is often called to as the golden period. The first 1,000 days of life is a sensitive period because of the negative impact which will be permanent and cannot be cured.

The first 1,000 days of life impact on physical growth and mental development and intelligence. Adverse effects that can be caused by nutritional problems in the short term are the disruption of brain development, intelligence, impaired physical growth, and metabolic disorders in the body. Bad consequences in the long term can arise the decrease of cognitive ability and learning achievement, decreasing immunity that is so easily hurt, and high risk for the emergence of diabetes, obesity, heart disease and blood vessels, cancer, stroke, and disability in old age. These will degrade the quality of Indonesian human resources, productivity, and competitiveness of the nation. Scaling Up Nutrition (SUN) is a global movement which unites governments, civil society, businesses and citizens in a worldwide effort to end under-nutrition.<sup>2-4</sup>

The cause of nutrition problems in the first 1,000 days of life is begun with pregnant women, and the impact happens until the children are under five years old. Nutritional problems that often occur in pregnant women are chronic malnutrition and anemia. Based on data of National Basic Health Research (2010), the prevalence of chronic malnutrition in pregnant women aged 15-49 years old is 24.2% and prevalence of anemia in pregnant women is 37.1%. This is in line with the increasing nutritional problem in toddlers, which are 19.6% malnutrition and 37.2% stunting.<sup>2,3,5</sup>

Nutritional problems which still occur in Indonesia must be solved because of their large impacts for the survival of a nation. In solving nutritional problems need teamwork and commitment from all parties. Movement of the first 1,000 days of life is a movement for nutrition

improvement set by the Indonesian government and need teamwork from diverse sectors and stakeholders in reducing nutritional problems.<sup>6</sup> Scaling Up Nutrition (SUN) or the movement of the first 1,000 days of life, consists of specific nutrition interventions and nutrition-sensitive interventions. Specific interventions are the actions or activities in the plan which are specific to the group in the first 1,000 days of life. Sensitive interventions are various development activities in the health sector. The target is the general public, not specific to the first 1,000 days of life. One of goals for nutrition intervention is a sensitive teenager. It is youth that needs serious attention in view of adolescence that is a time of transition from children to adults and not yet reach the stage of the physiological and psychosocial maturity.

Teenagers begin to make decisions by themselves about health and begin to make and adopt behaviors that will affect on their health and the health of their children.<sup>7</sup> Adolescents can be given nutrition education as the preparation for marriage life. Nutrition education about SUN can be given to adolescents in order to make them knowledge about good nutrition and the education is very useful for life in the future. These interventions are expected to someday be able to contribute in reducing nutritional problems, especially problems of nutrition in the group of SUN.

Knowledge of nutrition and health can be improved through several strategies, one of which is through health education in formal education. Health education is carried out in formal education because the target is easily reached, well organized, an age group that is sensitive and receptive to change, easy to be guided, directed and instilled for good habits.<sup>8</sup>

Based on the interview conducted to the students of Diploma III in Midwifery Program Study at Santa Elisabeth Medan School of Health Sciences, there were students who were less aware of nutrition information on SUN, including the nutritional needs of pregnant women, exclusive breastfeeding and colostrum. They only know that pregnant women need some care during pregnancy, eat nutritious foods and get enough rest. Therefore, this study concerned on nutrition education that focused on the SUN to students of Diploma III in Midwifery at Santa Elisabeth Medan School of Health Sciences and got the impact of this education on knowledge and attitude of students. Through education, students can prepare themselves with good nutrition and qualified knowledge as their preparation to be parents in the future in order to apply good parenting, especially during the first 1,000 days of life that was instrumental in the formation of human resources in the future. Moreover, they can deliver the material to the public when they are in the community or when they help pregnant women, maternal and postpartum mothers.

**Method**

The type of this study was quasi experimental study designed with one group pre-test and post-test. This study was conducted at Santa Elisabeth Medan School of Health Sciences from January to April 2016.

The population was students at Santa Elisabeth Medan School of Health Sciences. Sampling was conducted purposively and samples were students at third level of Diploma III in Midwifery Study Program, Santa Elisabeth Medan School of Health Sciences. Based on data the Administrative Bureau of Academic Affairs, the number of students at third level of Diploma III in Midwifery Study Program Santa Elisabeth Medan School of Health Sciences Academic Year 2015/2016 were 115 students. Independent variable in this study was education. Dependent variables was students' knowledge and attitude.

In giving education, visual media (slides) and module about SUN were used. Education class was conducted four times within two weeks by using lecture and discussions methods. Post-test was given to sample in the first day, education about nutrition for pregnant and fetal was given in the fourth day, education about nutrition for baby aged 0 until 6 months was given in the seventh day, education about nutrition for baby aged 7 until 24 months was given in the tenth day, and post-test was given to sample in the thirteenth day.

This study used questionnaires as an instrument to measure knowledge, attitude and data of respondents. The first questionnaire was to determine knowledge with 30 questions. The second questionnaire was to determine attitude with 15 sentences. Data were analyzed with univariate and bivariate using the paired sample t-test.

**Results**

Most of students were 20 years old (87.7%), followed by 21-year-old students (12.2%) and 19-year-old students (0.9%).

Based on Table 1, before education, the respondents had middle knowledge of SUN (53%) and unfavorable attitude (45.2%). After education the respondents had an increased knowledge of SUN (85.2%) and favorable attitude (100%).

In the Table 2, paired sample t-test for knowledge showed the probability value (p) = 0.000, Xscore min was -1.387 and Xscore max was -1.187. Therefore p < 0.05, which means that there were significant difference

in knowledge of Diploma III in Midwifery students before and after SUN education, and SUN education had increased students' knowledge.

Results of paired sample t-test, attitudes before and after education save the probability value (p) = 0.000, Xscore min was -0.545 and Xscore max was -0.360. Therefore p < 0.05, that there were significant differences in means of students' attitude before and after SUN education, meaning that SUN education had increased students' attitude.

**Discussion**

According to the WHO in Notoatmodjo,<sup>8</sup> one of the strategies for changing behavior is giving information to improve knowledge. The improving knowledge will make people aware to themselves and behave according to the knowledge. One way of giving information is nutrition education at school. Based on this study, before education, students had low level of knowledge (45.2%) and an average score of pre-test students only 17.08. This indicated that the student's knowledge of SUN was still low. After the education, SUN was done four times and increased students' knowledge to 85.2% from 1.7% of students with knowledge level. The increasing students' knowledge was also evident from the average score of knowledge which rose to 26.76. The increasing knowledge was because of a new information submitted to the students through the educational process, in which new information was a substitute for the knowledge that had been possessed previously or an improvement from the previous update.<sup>9-10</sup>

Knowledge was divided into six levels, where in this study students' knowledge of SUN was still at the stage of knowing.<sup>10</sup> This was evident from the student's ability to respond, outlining and defining correctly about SUN.

**Table 1. Knowledge and Attitude of Students of Diploma III in Midwifery Year 2016 before and after Education**

Variable	Category	Before		After	
		n	%	n	%
Knowledge	Low	52	45.2	0	0.0
	Middle	61	53.0	17	14.8
	High	2	1.7	98	85.2
Attitude	Unfavorable	52	45.2	0	0.0
	Favorable	63	54.8	115	100.0

n= number of sample

**Table 2. Results of Paired Sample T-test on Students' Knowledge and Attitude before and after Education**

	Mean	SD	SE	X Score		t	p Value
				Min	Max		
				Knowledge	1.287		
Attitude	-0.452	0.500	0.047	-0.545	-0.360	-9.700	0.000

Based on the analysis using paired sample t-test, the average gap of students's knowledge before and after education was 1.287. The results of paired sample t-test also obtained p value < 0.05. Thus, it could be concluded that there was a significant difference in students' knowledge of SUN before and after education, or there was influence of SUN education in increasing students' knowledge.

Education was able to increase the students' knowledge. Education needs methods. The methods used were lectures and discussions with visual media (slides) and module. Health education would be more effective if you use many media that stimulates the senses, especially the sense of vision and hearing. Nutrition education about SUN may be easily understood by students because of combination of two media, which were visual media (slides) and module. The methods and media significantly increased knowledge.<sup>11</sup> The use of audio-visual media was more effective in improving student learning outcomes compared to conventional media.

The more senses were used to receive something, then more and more clearly presented information made it easier for the audience to absorb the information and remember it.<sup>12</sup> Nutrition education affected the increasing students' knowledge.<sup>13</sup> There were significant nutrition education with media like picture books to increase knowledge of nutrition among school children. Likewise, there was a study conducted by implementing education and training to enhance the knowledge and ability of mothers in preparing a balanced diet.<sup>14</sup> The increasing knowledge and attitude were caused by media information like video compact disc (VCD), leaflet and slide.<sup>15</sup> The result of this study was in line with study using VCD and leaflet for increasing knowledge, attitude and behaviour of students in motorcycle accident prevention.

Study was essentially a process of communication that aimed to convey information or messages that can stimulate the mind, feelings, and the interest and attention of learners.<sup>11</sup> Nutrition education can be done in schools effectively. The schools were well-organized and easily-to-reach group. In addition to the age composition of students who were in the range of 14-17 years, the age group is sensitive and receptive to change, and easily to guide, direct, and instill their' good habits.<sup>8</sup>

Teenagers or young people began to make independent decisions about their health and began to form and adopt behaviors that affect health.<sup>7</sup> Therefore, nutrition education namely the first 1,000 days of life was very appropriate given during adolescence. The students who have increased knowledge about the first 1,000 days of life are expected to apply this knowledge in the future, and assist in speeding up the improvement of nutrition in Indonesia.

In the results of this study, before education 45.2% of

students had unfavorable attitude on SUN. After education, students who had favorable attitude increased to 100%. The increasing number of students with favorable attitude was due to the stimulus in the form of education conducted by the methods of lectures and discussions, as well as the use of visual media (slides) and module. Similar study was done by Notosiswoyo,<sup>15</sup> which concluded that audio-visual media were more optimal as a alternative learning model. This study combined two media, which were visual media (slides) and module, and the students understood SUN easily because they not only read modules, but also saw presentation with an interesting slides. The changing of attitude after the nutrition education was influenced by the extent to which the content of communications or messages noticed, understood, and accepted causing a positive response.<sup>16,17</sup> This study was similar to the other study findings that nutrition education and counseling could increase knowledge and behavioral change of people living with HIV. Nutrition education was important for everyone to keep them healthy and have good quality of life.

Changes in attitude was divided into four levels. In this study, the attitude of the student had reached the stage respect (valuing).<sup>10</sup> The attitude was a reaction that was still closed from a person to a stimulus or object. Attitude was simply the tendency to hold action on an object in some way. Thus attitude was the views, opinions, feedback or ratings and a person's feelings to the stimulus or object which was accompanied by a tendency to act. This study showed that students had strong curiosity and had positive attitude towards the first 1,000 days of life.

The results of analysis using paired sample t-test obtained the average gap attitudes before and after education were 9.700. In paired sample t-test also showed the p value < 0.05. It could be concluded that there was a significant difference in students' attitude to SUN before and after education, meaning that there was the influence of SUN education to the improvement in students' attitudes. This was in line with study which developed health and nutrition education programs in schools with resulting in an increase in awareness, knowledge and behavior affected on better nutrition among children.<sup>17,18</sup>

## Conclusion

Results of this study find that SUN education significantly influences the increase of students' knowledge and attitudes. The methods and media used in this study can stimulate students' knowledge and attitude, so the students more easily understand and remember.

## Recommendation

Diploma III in Midwifery Study Program is expected to convey the latest nutrition information, so the students

become knowledgeable about SUN. Lecturers and students are encouraged to educate community through service activities. Diploma III in Midwifery students are expected to socialize SUN to the patients through lectures and discussion.

## References

1. Presiden Republik Indonesia. Peraturan Presiden Republik Indonesia No. 72 Tahun 2015 tentang Sistem Kesehatan Nasional. 2015 [cited 2015 December 18]. Available from: [www.hukumonline.com/pusatdata](http://www.hukumonline.com/pusatdata).
2. Kementerian Koordinator Bidang Kesejahteraan Rakyat Republik Indonesia. Pedoman perencanaan Program Gerakan Nasional Sadar Gizi dalam rangka 1000 Hari Pertama Kehidupan. 2015 [cited 2015 December 18]. Available from [http://www.bappenas.go.id/files/5013/8848/0466/PEDOMAN\\_SUN\\_10\\_Sept\\_2013.pdf](http://www.bappenas.go.id/files/5013/8848/0466/PEDOMAN_SUN_10_Sept_2013.pdf).
3. Kementerian Koordinator Bidang Kesejahteraan Rakyat Republik Indonesia. Kerangka kebijakan gerakan nasional percepatan perbaikan gizi dalam rangka 1000 Hari Pertama Kehidupan (Gerakan 1000 HPK). 2015 [cited 2015 December 18]. Available from [http://www.bappenas.go.id/files/7713/8848/0483/KERANGKA\\_KEBIJAKAN\\_-\\_10\\_Sept\\_2013.pdf](http://www.bappenas.go.id/files/7713/8848/0483/KERANGKA_KEBIJAKAN_-_10_Sept_2013.pdf).
4. Scaling Up Nutrition (SUN) Movement Strategy 2012-2015. September 2012 [cited 2015 December 22]. Available from <https://scalingupnutrition.org/wp-content/uploads/2012/10/SUN-MOVEMENT-STRATEGY-ENG.pdf>.
5. Kementerian Kesehatan Republik Indonesia. Riset Kesehatan Dasar tahun 2013. Jakarta: Kementerian Kesehatan Republik Indonesia; 2013 [cited 2015 December 21]. Available from <http://www.depkes.go.id/resources/download/general/Hasil%20Riskasdas%202013>.
6. Bappenas Republik Indonesia. Peraturan Presiden No. 42 Tahun 2015. Gerakan Nasional Percepatan Perbaikan Gizi. 2015 [cited 2015 December 20]. Available from [http://kgm.bappenas.go.id/document/datadokumen/43\\_DataDokumen.pdf](http://kgm.bappenas.go.id/document/datadokumen/43_DataDokumen.pdf).
7. World Bank. Naskah kebijakan kesehatan dan gizi sekolah. Oktober 2009 [cited 2015 December 20]. Available from: <http://documents.worldbank.org/curated/en/343721468044658305/pdf/519520REVISED01ief1INDO1Final1LoRes.pdf>.
8. Notoatmodjo S. Promosi kesehatan teori dan aplikasi. Jakarta: Rineka Cipta; 2010.
9. Mubarak WI, Khoirul CR, Supradi. Promosi kesehatan sebuah pengantar proses belajar mengajar dalam pendidikan. Yogyakarta: Graha Ilmu; 2007.
10. Notoatmodjo S. Pendidikan dan perilaku kesehatan. Jakarta: Rineka Cipta; 2005.
11. Haryoko S. Efektivitas pemanfaatan media audio-visual sebagai alternatif optimalisasi model pembelajaran. Jurnal Edukasi Elektro. 2009; 5 (1): 1-10.
12. Daryanto. Media pembelajaran. Yogyakarta: Gava Media; 2010.
13. Ikada DC. Tingkat penerimaan buku cerita bergambar sebagai media pendidikan gizi dan pengaruhnya terhadap pengetahuan gizi anak sekolah dasar. Bogor: Fakultas Ekologi Manusia Institut Pertanian Bogor; 2010.
14. Syarkowi A. Peningkatan pengetahuan gizi masyarakat melalui pendidikan dan latihan. Forum Pendidikan. 2008; 27 (2).
15. Notosiswoyo M. Penggunaan VCD dan leaflet untuk peningkatan pengetahuan, sikap dan perilaku siswa dalam pencegahan kecelakaan sepeda motor. Kesmas: Public Health National Journal. 2014; 8(8): 373 – 9.
16. Rahmawati I, Toto S, Ira, P. Pengaruh penyuluhan dengan metode audio visual terhadap peningkatan pengetahuan, sikap dan perilaku ibu balita gizi kurang dan gizi buruk di Kabupaten Kotawaringin Barat Provinsi Kalimantan Tengah. Jurnal Gizi Klinik Indonesia. 2007; 4 (2): 69-77.
17. Hidayani F, Sartika RAD. Knowledge and behavior change of people living with HIV through nutrition education and counseling. Kesmas: National Public Health Journal. 2016; 10(3): 107 – 12.
18. Sherman J, Ellen M. Developing a nutrition and health education program for primary school in Zambia. Journal of Nutrition Education and Behavior. 2007; 39: 335-342.