

The Effectiveness of NEM (Nutrizone Educational Media) Compared with Knowledge and Attitudes in Early Adults in The West Jakarta Region

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Abstract

Metabolic syndrome is a disease that often occurs in early adulthood. Maintaining a good lifestyle to prevent non-communicable diseases is very important to maintain a good quality of life. In early adulthood, most of them are still not exposed to information related to metabolic syndrome, so it is necessary to provide interventions associated with it. This study uses the Nutrizone gameboard intervention media. Good early adults' knowledge and attitude about Metabolic Syndrome may lead to a good lifestyle that prevents them from suffering from NCDs. An intervention media may improve their knowledge and attitude. The research design used was pre-experimental one with subjects of 40 early adults. They received one-time education using Nutrizone Media and showed Significance difference scores before and after intervention based on paired sample t-test and Wilcoxon test. Nutrizone board games can improve early adult knowledge and attitudes to be used as educational media.

Keywords: Nutrizone, knowledge of metabolic syndrome, attitude toward metabolic syndrome

Abstrak

Sindrom metabolik adalah suatu penyakit yang sering terjadi dikalangan dewasa awal. Menjaga gaya hidup yang baik untuk mencegah penyakit tidak menular terjadi sangatlah penting untuk menjaga kualitas hidup yang baik. Pada masa dewasa awal juga Sebagian besar masih kurang terpapar informasi terkait sindrom metabolik sehingga perlu diberikan intervensi terkait sindrom metabolik. Penelitian ini menggunakan media intervensi permainan papan (gameboard) nutrizone. Penelitian ini bertujuan untuk mengetahui pengaruh nutrizone terhadap pengetahuan dan sikap dewasa awal terhadap sindrom metabolik. Metode penelitian yang digunakan adalah Quasi Experimental Pre dan Post-test design dan jumlah responden sebanyak 40 orang dewasa awal. Responden mendapat edukasi menggunakan media nutrizone, berdasarkan uji Paired Sample T-test, dan Wilcoxon didapatkan hasil ada perbedaan pengetahuan serta sikap sindrom metabolik ($p < 0.05$). Permainan papan nutrizone dapat meningkatkan pengetahuan dan sikap dewasa awal sehingga dapat digunakan sebagai media edukasi.

Kata kunci: Nutrizone, pengetahuan sindrom metabolik, sikap sindrom metabolik

Introduction

Early adulthood is a period of transition both physically, mentally, and intellectually. In general, those who are said to be adults aged 20 years. A lack of knowledge, attitudes, or unwillingness to know more about the risk of an unhealthy lifestyle it becomes behavior which, in turn, the recurrence of unhealthy behavior eventually causes metabolic syndrome (1). The age of over 20 years is the right time to prevent non-communicable diseases that will come later in life. One of the causes of metabolic syndrome is non-communicable diseases. Metabolic syndrome significantly develops in early adulthood (2–4).

In research conducted by Nolan in 2017 (5) using the pooled analysis method, 31 countries were found with a total of 26,609 early adult respondents, of which 12,473 (45.7%) respondents had metabolic syndrome. In Indonesia, in 2015 the prevalence of metabolic syndrome was 23%, including 26.6% in women and 18.3% in men (6). For prevalence in 2011 in Jakarta and surrounding areas with ages above 20 years, it was found to be 21.6% with a ratio of 24.7% for men and 11.8% for women (7). The result assessment of college student's knowledge and attitude relevant to metabolic syndrome \pm 20% incorrectly identified metabolic syndrome (8).

Researchers are interested in conducting research on café visitors because, in a study conducted by Qariati in 2019 (9) on café in Banjarmasin, it was that visitors in the early adult had less knowledge about healthy living behavior by 36.8% and attitudes towards active smokers 44.1%. Nutrizone Education Media is a one-way method to increase knowledge and attitude.

Efforts to provide education about metabolic syndrome can be done with

educational media. Providing education through the media can increase knowledge and attitudes. It was also stated by Rodgers and Thorton that the media used in learning must be able to attract the interest and attention of respondents so that the purpose of education through this media can be conveyed (10). In addition, the media must be able to provide interest so that respondents are able to receive the information provided. Educational media is also used not only to provide knowledge to respondents but can arouse feelings of interest and pleasure when given education (11).

In a study conducted by Gharibi in 2018 (12) using an educational package (leaflets, posters, and others) the results of the study showed that the knowledge value had an effect with a p-value $<$ 0.0001. But the attitude value had no significant impact with a p-value $<$ 0.098. Therefore, the author (s) innovated to create media in the form of a board game to increase respondents' knowledge and attitudes.

According to Rinayati, in 2016 educational games significantly affect the level of knowledge is concluded that the media with this type of game effectively knowledge (13). One of the ways to overcome this metabolic syndrome is to change a healthy lifestyle from an early age. Interactive media can also increase knowledge and attitudes (14).

Based on a preliminary study conducted by the researcher, it can be seen that visitors to one of the cafes in the West Jakarta Area have fewer attitudes and knowledge about metabolic syndrome which can be seen from smoking habits, uncontrolled alcohol, sweet foods, and others. Therefore, this study aims to determine the effect of Nutrizone on the knowledge and attitudes of early adults.

Methods

This research used one group with a pretest-posttest one-group design. The sample was early adults. The total sampling was about 40 early adults. This sampling method uses the formula for testing the hypothesis of the average difference (Dependent). This research was conducted in one group about metabolic syndrome with media intervention Nutrizone. The population of this research sample is early adults at Milestones Café, West Jakarta amounting to 60 to 70 people.

Before Intervention was held, the respondent did a pretest to see the knowledge and attitude score. After the intervention, the respondent did a post-test to see the effect of the media intervention of Nutrizone on knowledge and attitude.

The primary data were obtained using a questionnaire of 26 questions about knowledge and attitudes related to metabolic syndrome. The questionnaire was tested using a reliability test, and the value of Cronbach's Alpha was 0.829 (>0.80), which was valid and reliable. Nutrizone can be used by rolling the dice then, running pawns into the zone in nutrizone, and answering questions in certain zones to get points. Nutrizone can be used with 2-4 players for a duration of 15 – 20 minutes for one game.

The paired sample T-test was used to determine differences in knowledge and attitudes related to metabolic syndrome for early adults of visitor café before and after the intervention. This research has received approval for ethical studies from the Faculty of Health Sciences, Esa Unggul University, with No. 0922-10.009 /DPKE-KEP/FINAL-EA/UEU/X/2022.

Results

The research respondents have criteria with an age limit of 20 to 25 years. The number of respondents who became the research sample consisted of 40 respondents (Table 1). Table 1 shows that respondents aged 20 years were 32.5%, 21 years was 10.0%, 22 years was 27.5%, 23 years was 15.0%, 24 years was 5.0%, and for 25 years was 10.05%. In the category of the male gender, there are more than female with a percentage of 55.05% and 45.0% respectively.

Table 2 shows that changes in the average knowledge score of metabolic syndromes in the pretest is 37.50 ± 68.76 and experiences an average increase with a score of 68.75 ± 100.0 after the intervention. For attitude score of metabolic syndromes in the pre-test is 9.09 ± 90.91 and then in the post-test $27.72, \pm 100.0$.

Based on the bivariate tests, the effect of nutrition education using the Nutrizone game media changes respondents' knowledge about metabolic syndrome (Table 3). Table 3 it can be seen from The Table 3 that the Nutrizone media has a significant effect on knowledge with post-test and pretest scores. Knowledge data obtained are normally distributed using Paired T-test with a P-value of 0.000 (<0.05). Meanwhile, the attitude of the data is not normally distributed so the Wilcoxon test was tested with a pre-test and post-test with a P-value of 0.000 (<0.05), which means the result is significant.

Discussion

The results on early adults mostly have active smoking habits, low-quality diet, and low physical activity. Therefore, it is recommended that the group with poor lifestyle habits be given education regarding good diet quality

Table 1. Characteristics of Respondents

Characteristics of early adulthood	n	%
Age (years)		
20	13	32.5
21	4	10.0
22	11	27.5
23	6	15.0
24	2	5.0
25	4	10.0
Gender		
Male	22	55.0
Female	18	45.0

Table 2. Univariate results of early adulthood knowledge and attitude score before and after Nutrizona board game education intervention

Indicator	Pre-test	Post-test
Knowledge		
Mean	61.25	87.72
Standard Deviation	10.515	8.500
Minimum	37.50	68.75
Maximum	68.75	100.0
Attitude		
Mean	50.90	90.90
Standard Deviation	24.07	15.16
Minimum	9.09	90.90
Maximum	90.91	100.0

Table 3. Bivariate analysis of knowledge score for early adulthood before and after Nutrizona board game education intervention

	Test Category		p-value
	Pretest	Post-Test	
Knowledge (n=40)	61.25 ± 10.50	87.72 ± 8.50	<0.001 ^a
Attitude (n=40)	50.90 ± 24.07	85.00 ± 15.16	<0.001 ^b

^aPaired t-test; ^bWilcoxon Test

aimed at preventive actions related to health problems in early adulthood.

Characteristics of early adult knowledge in the data obtained showed that before the intervention using Nutrizona media, 32.5% (13 people) had less knowledge, and 67.5% (27 people) had moderate knowledge. Then for the attitude characteristics of early adulthood, the data obtained before the intervention was 82.5% (33 people) in the bad category and 17.5% (7 people) in the good category. It can be seen that the

knowledge and attitudes of early adults about metabolic syndrome still need to be improved.

Knowledge of early adulthood before and after intervention

The test of knowledge in this study was knowledge of metabolic syndrome in early adulthood. According to Notoadmojo in 2012, knowledge measurement can be done by interview or questionnaire that asks about the material's content to be measured by the

research subject or respondent (15). The knowledge measured in this study was the respondent's ability to answer 16 questions through a questionnaire given to early adults who were respondents to measure before being given nutrition education in the form of an intervention using the Nutrizone media. Respondents in this study amounted to 40 people.

To prevent metabolic syndrome from occurring, it is necessary to provide education about early prevention related to health problems through a good lifestyle (16). Gameboard games can be played or played by adults for educational reasons. Gameboard media can also provide effective results by giving interesting, exciting messages related to health and education that is very safe to play (17).

Results of research conducted by Catia Sodre in 2018 using the game "The Metabolic Race" based on board games, respondents were able to understand metabolic syndrome as one of the identifications of non-communicable diseases and their risk factors (18).

Before the intervention was carried out using Nutrizone media from a board game, the respondents did a pre-test. The results showed that the average knowledge score before being given education using the Nutrizone media was 61.25 points. From this score, it is known that some respondents have not been able to answer the question "metabolic syndrome is a disease that can trigger diabetes, stroke, and other non-communicable diseases" correctly.

After being educated using Nutrizone media, it was found that there was an increase in knowledge with an average value of 87.72 points. In addition, an increase was seen in the respondent's ability to answer another question about metabolic syndrome correctly. The questions are related to the impact of knowledge related to

metabolic syndrome and the incidence of complications of metabolic syndrome.

The increase in knowledge of the respondent's data is supported by the availability of respondents to play the Nutrizone board game media, and this can be seen from the active participation of the respondents as evidenced by scores above 80 points. According to researchers, Nutrizone media can increase early adult knowledge as evidenced by The Paired T-Test with a p-value of <0.001 , and research results also support that using media with visual concepts can increase respondents' knowledge (11).

At the time of the study, most of the respondents while doing the pre-test had never heard of metabolic syndrome and responded that they had never heard of it before. Respondents in this study also admitted that they had never been exposed to information related to metabolic syndrome and its dangers. According to research conducted by Wang in 2019, that understanding knowledge and predictions related to metabolic syndrome is for adults to take early prevention related to metabolic syndrome which can trigger non-communicable diseases in the future; for that, health education needs to be applied systematically to preventive action (19).

The attitude of early adulthood before and after intervention

The attitude test in this study was attitudes about metabolic syndrome in early adulthood. According to Notoadmojo in 2012, attitude measurement can be done directly and indirectly. You can now ask how the respondent's statement is about an object. It can also be done now with hypothetical words, then the respondent's opinion is requested, with

the answers agreeing and disagreeing (15).

Research conducted by Gilliam in 2018 using board game media to improve youth attitudes showed an increase in youth attitudes in board games played by more than 2 people (20). When measuring attitudes before the intervention with Nutrizone media was carried out through the pretest, 40 respondents obtained an average score of 50.90 points. From this score, some respondents answered incorrectly the question “Do you agree that an unhealthy lifestyle cannot increase the risk of metabolic syndrome?”.

After being educated using Nutrizone media, it was found that there was an increase in attitudes with an average value of 85.00, with a difference of 34.09 points during the pre-test. With an increase seen in respondents being able to answer another question. These questions are related to early adulthood responding to a good lifestyle related to efforts to prevent metabolic syndrome such as limiting the consumption of fast food, controlling body weight and abdominal circumference, and limiting nutritional intake through foods high in macronutrients (especially carbohydrates and fats).

From the increase in attitude toward the respondent’s data, supported by participatory participation and the availability of respondents to play the Nutrizone board game media, it obtained a score above 80 points. According to research, Nutrizone media can improve early adult attitudes as evidenced by the Wilcoxon Test with a p-value of 0.000 (<0.05), which is significant.

At the time of research, the respondents had qualitatively, according to the researchers, some respondents had a reasonably active smoking habit and paid less attention to the dangers of

metabolic syndrome which will cause a decreased quality of life.

The attitude of metabolic syndrome to health is one of the most critical factors influencing lifestyle. Health attitudes are needed to include education programs to prevent increasing the risk of metabolic syndrome. If preventive measures are not taken, such as providing nutrition education it can lead to the risk of cardiovascular diseases in the future (21).

Conclusion

Based on the results of research, analysis, and discussion that have been compiled by the author, it can be concluded that Nutrizone media can increase knowledge and attitude of early adulthood attitudes are supported by active participation for respondents.

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