

The Impact of Counseling on the Improvement of Nutritional Knowledge and Physical Activities on Women Prisoners (A Study at Women Penitentiary Institution Class II A Semarang)

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ABSTRACT

One of the factors that cause health problems is the lack of information about nutrition and physical activity. The study aims to determine the effect of counseling on changes in nutritional knowledge and physical activity on women prisoners in the Women Penitentiary Institution Class II A Semarang. This study used quasi-experimental with one group pre-test and post-test design. Intervention in the form of one-time counseling. Pre test and post test are done in one day. The sampling technique was using simple random sampling. The subjects were 50 women prisoners from common criminal offence cases. Data was analyzed by using Wilcoxon Signed Ranks Test. The results showed that most of the subjects had high school education level (80%). The mean of age, body weight, body height and body fat percentage were 34.5 ± 8.4 years old, 61.3 ± 9.0 kg, 154.4 ± 4.5 cm and $33.7 \pm 47\%$. Body Mass Index of 44% subjects were type I obesity. Mid Upper Arm Circumference (MUAC) of 94% subjects were normal. The median of knowledge score before counseling were 19 (15-21) and knowledge score after counseling were 20 (15-25). There was an average difference of knowledge of the subjects before and after intervention ($p = 0.003$). There was a correlation between education and knowledge of the subjects ($p = 0.017$). It is recommended for the penitentiary administrators to give education about nutrition and physical activity for the prisoners to increase their knowledge.

Keywords: *Counseling, Nutritional Knowledge, Physical Activities Knowledge, Women Prisoner*

INTRODUCTION

Factors that cause health problems are one's ignorance as well as the lack of information about nutrition and physical activity. Education concerning on nutrition and physical activity are planned efforts to influence others either individuals, groups, or communities so that they do what is expected by educational behavior.¹ the provision of education in the form of certain material

will provide new knowledge for someone. It is expected that if someone has knowledge related to good nutrition and physical activity, it will have an impact on good behavior as well.²

One of the educational media related to nutrition and physical activity for inmates is giving counseling by using *powerpoint* medium, this is according to the reason that oral communication can change one's practice to be better. Providing counseling can also speed up the level of one's understanding, so it is easier to change one's attitude since comprehension or knowledge is an important point in changing one's attitude and actions.³

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Correctional Facility is a technical service unit that is responsible for looking after and educate the prisoners under the Directorate General of Correctional Institutions of the Ministry of Justice and Human Rights. Prisoners are individuals who commit crime and have

carried out the trial and have been convicted of criminal penalty.⁴ Women Penitentiary Institution Class II A is a particular prison for women prisoners located in Mgr. Sugiyopranoto Street Number 59.

Based on the background above, the researchers are interested to find out the impact of education provision with counseling method on changes of nutritional knowledge and physical activity of women prisoners in the Women Penitentiary Institution Class II A Semarang.

MATERIALS AND METHOD

The type of this research is *quasi-experimental* with *one group pre-test and post-test design*. The sampling technique used was simple random sampling. Population size was 370 women prisoners. The subjects of the study were 50 women prisoners from the cases of domestic violence, murder, theft, torture, embezzlement, *trafficking*, banking, child protection law, corruption, fraud, taxation, and employment. The independent variables in this research were the provision of nutrition-related education and physical activity with counseling methods, while the dependent variable was the change in prisoner’s knowledge.

Data analysis was conducted univariately to know the characteristics of respondents including education level, age, body weight, body height, Body Mass Index (BMI), Mid Upper Arm Circumference (MUAC) and body fat

percentage. The data normality test used *Kolmogorov-Smirnov* and relationship test used *Wilcoxon Signed Ranks Test*. The instruments used for the research were:

1. **Education level:** Direct interviews using questionnaires.
2. **Anthropometrics**
 - a. Body weight was measured using a digital weight scale with the accuracy of 0.001 kg.
 - b. Body height was measured by *microtoise* with the accuracy of 0.1 cm.
 - c. Mid Upper Arm Circumference (MUAC) was measured using MUAC tape with the accuracy of 0.1 cm.
 - d. Body fat percentage was measured using *Bioelectrical Impedance Analysis* (BIA) with the accuracy of 0.1%.
3. **Knowledge:** Structured questionnaires that have been piloted and viewed through *pre-test* and *post-test*.

RESULTS

Frequency distribution of respondents’ characteristics based on education level, age, body weight, body height, Body Mass Index (BMI), Mid Upper Arm Circumference (MUAC) and body fat percentage can be seen in Table 1.

Table 1: Frequency Distribution of Respondents’ Characteristics

Variable	%	Mean	SD	Min	Max
Education level					
Elementary	12	-	-	-	-
Junior High School	4	-	-	-	-
High School	80	-	-	-	-
Diploma	4	-	-	-	-
Age (years)	-	34,5	8,4	15	51
Body weight (kg)	-	61,3	9,0	44,8	85,4
Body height (cm)	-	154,4	4,5	145,4	166,1
BMI (kg/m ²)					
Thin	2	-	-	-	-
Normal	22	25,7	3,6	18,3	36,0
Fat	22				
Type I obesity	44	-	-	-	-
Type II obesity	10	-	-	-	-
MUAC (cm)					
<23,5	6	29,7	3,0	21,5	37,5
≥ 23,5	94				
Body fat (%)	-	33,7	4,7	20,5	46,2

Table 1 shows that 80% of respondents have Senior High School education level. The average age of respondents was 34.5 ± 8.4 years. The average weight of respondents was 61.3 ± 9.0 kg. The average height of respondents was 154.4 ± 4.5 cm. 44% of respondents have Body Mass Index (BMI) classified as obesity type I. The average of Body Mass Index by age was classified as obesity type I by 25.7 ± 3.6 kg/m². 94% of respondents have Mid Upper Arm Circumference (MUAC) ≥ 23.5 cm. The average Mid Upper Arm Circumference (MUAC) as normal at 29.7 ± 3.0 . The average of body fat percentage of the respondents classified as obese of $33.7 \pm 47\%$.

Table 2: Distribution of Respondents' Knowledge Responses

No.	Question	Pre-test		Post-test	
		n	%	n	%
1.	Fried foods/fritters cause disease.	50	100	50	100
2.	Meat, fish, tofu are sources of fiber	6	12	11	22
3.	Eating a variety of foods can fulfill energy needs	36	72	39	78
4.	Cassava, taro, spinach are sources of energy	42	84	42	84
5.	Vegetables, fruits included in fiber sources	41	82	42	84
6.	Healthy food is fast food	38	76	41	82
7.	Vegetables, fruit can boost immunity	49	98	49	98
8.	Colorful vegetables are good for anemia	38	76	45	90
9.	Lack of calcium can cause bone loss so it is needed to drink milk	49	98	50	100
10.	Nutrients the body needs are only carbohydrates and fats	34	68	36	72
11.	The use of salt, salted fish needs to be reduced	45	90	44	88
12.	Drink at least 8 glasses of water per day	49	98	50	100
13.	The benefit of doing exercise is for physical fitness	49	98	50	100
14.	Excessive water consumption can cause dehydration	37	74	44	88
15.	Before doing exercise, you should warm up first	49	98	48	96
16.	Exercise at least 2 hours after eating	31	62	31	62
17.	Nighttime is a good time for sports	41	82	47	94
18.	Vegetables include sources of fat	45	90	46	92
19.	The function of nutrients is for the healthy body	41	82	40	80
20.	Sugar is functioned for bone loss	15	30	23	46
21.	The benefits of exercise are for attitude and movement	25	50	29	58
22.	Exercises should be liked or desirable	42	84	43	86
24.	The lack of vitamin K can cause blood hard to freeze	16	32	25	50
25.	Fruit is a source of vitamins	40	80	39	78

Measurement of knowledge on the questionnaire has a total of 25 questions related to nutrition and physical activity. Each correctly answered question is given a score of 1, while the wrong question is scored 0. Table 2 shows that most of the answers to the questions asked to measure the respondents' knowledge increased after the intervention.

Table 3: Knowledge Differences of Respondents Before and After The Counseling

	Median (min-max)		p
	Before	After	
Knowledge	19 (15-21)	20 (15-25)	0,003 ^a

a. Wilcoxon Signed Ranks Test

Table 3 shows that there are differences in knowledge before and after the counseling related to nutrition and physical activity ($p = 0.003$).

Table 4: Relationship between Education and Knowledge of Respondent

Education level	Knowledge		Total	p
	Less	Good		
Elementary	7	1	8	0,017 ^a
Secondary	16	26	42	
Total	23	27	50	

a. Fisher Exact Test

Table 4 shows that as many as 7 respondents with elementary education have less knowledge and 1 respondent has good knowledge. A total of 16 respondents with secondary education have less knowledge and 26 respondents have good knowledge. There is a relationship between education and knowledge ($p = 0,017$).

DISCUSSIONS

A. Knowledge of Respondents Before and After

Intervention: Provision of intervention in this research is an education in the form of counseling by using the *powerpoint* medium. Materials delivered are related to nutrition and physical activity.

There is a difference of knowledge before and after the provision of intervention, this means that there is an influence of education in the form of counseling at the level of respondent knowledge related to nutrition and physical activity. The difference in knowledge can be known from the median change before the counseling amounted to 19 and increased after education provision of 20.

Education provision in the form of counseling by using *powerpoint* medium is considered quite effective in increasing the knowledge of respondents. This research is in line with the research on "Knowledge increment assessed for three methodologies of teaching physiology" and it states that there is an increase in the mean value of both the knowledge based on the *pre-test* and *post-test* results. Provision of education in the form of audiovisual media resulted in a 26% increase in knowledge compared to didactic methods of 7%.⁵

Knowledge is the result of human sensing or the result of knowing by a person to the object through his or her senses (eyes, ears, nose and so on), but most of it is received through the sense of sight and hearing. The senses that transmit knowledge to the brain are the eyes (approximately 75% - 87%).⁶

The improvement of knowledge scores may cause of various factors such as selection of media. Counseling starts with the interaction with the person to be counseled. Before the actual interaction, it is helpful to determine the information needed and then the formulate question. During the interaction, it is essential to introduce and openly talk in order to get

the confidence of the person to be counseled. Counseling is more effective if information is imparted in a very friendly way avoiding superiority and authority.⁷

The selection to use *powerpoint* medium in counseling is quite effective because it is received through the sense of sight (eyes) of the *powerpoint slides* that are displayed and received through the sense of hearing (ears) of the delivered material. In addition, the question and answer session at the end of the counseling can be used as a recall of knowledge that has been obtained. The level of knowledge can be changed by a combination of various methods. Another factor that may affect knowledge is interest that can be improved through the educational method used. Counseling using *powerpoint* medium can provide interest from the slide shown in the form of images, video, writing, and interesting designs.⁸

B. Relationship between Education and Knowledge:

There is a relationship between education and knowledge ($p=0,017$). This research is in line with the research on "Demographic Variation in Nutrition Knowledge in England".⁹

The level of formal education of the respondent can affect the person's ability to receive information. The higher level of a person's education, the easier one can absorb new information so that knowledge insight will be wider.¹⁰ Therefore, a person with a higher level of education will have better knowledge than someone with a low level of education.

Nutrition education is a significant factor in improving nutrition knowledge, attitudes and practices. It is important to note however, that though nutrition education is an important entry point to teaching nutrition, it is not the only source of nutrition knowledge. Nutrition education is the process by which people gain knowledge, attitudes and skills necessary for developing appropriate dietary habit.¹¹

CONCLUSIONS AND SUGGESTIONS

There is a difference between respondents' knowledge before and after the intervention. There is a relationship between education and knowledge of respondents.

It is expected that penitentiary administrators to provide education about nutrition and physical activity for the prisoners to increase their knowledge.

Conflict of Interest: Nil

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