Nutrition Literacy Program for Improving Public Wellness

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Abstract: The level of public wellness in the world is heading to a critical point, one of the reasons is a poor dietary habit. One of effort to change a bad diet is through nutrition literacy program. The research aims to describe nutrition literacy profile, level of wellness profile and analyze correlation both of them. The method used was experimental and sample in this research was 30 nutrition house communities. Data on nutrition literacy were collected by literacy instrument related science concept in 3 indicators: water supplies in the body, protein function in muscle founding and various fat and consumption impacts. Sample’s data of wellness were collected by water supplies in the body percentage, mass of muscle and fat in body percentage that measured by bio-impedance tools. The result showed (1) differentiation of nutrition literacy individual level (2) differentiation of wellness individually after the experiment (3) correlation between the level of nutrition literacy participants program and level of their wellness. In conclusion, nutrition literacy program through giving nutrition healthy and continuous education can increase nutrition literacy and level of wellness community.

1. Introduction
One of the characteristics of a developed society is the society has high levels of health, intelligence, and work productivity. One of the driving forces of increasing individual and community health is nutrition literacy [1]. Through nutritional and educational literacy program, each person is facilitated to understand nutrition basic concepts, one of the concepts of the science behind nutrition [2]. Systematic nutrition literacy and scientific education will encourage people to understand and have the ability to make themselves obtain optimal health [3,4].
The nutritional literacy program is an active effort to provide public understanding about the importance of health. In this context, nutrition literacy is not only interpreted as conceptual nutrition literacy [5,6,7,8,9], but more than that, the program is further directed at the effort to know more about healthy lifestyle and how to do it (functional nutrition literacy) [10], understands the reasons behind the decision to live a healthy lifestyle based on interactive nutrition literacy [11,12], does active role in helping others and criticizes the source of food consumed (critical nutrition literacy) [13].

Public’s lifestyles changing as a result of this nutrition literacy program were measured by public health indicators in terms water percentage, muscle mass, and body fat percentage [14]. These three components of the human body will be different in each person whether based on the age group, gender and discipline of a person in performing the pattern of daily and activity [15]. Previous studies have not yet accurately measured the link between a person's nutritional literacy and the willingness to follow the program, and the impact of program participation on changes in the wellness index. Therefore, this study will reveal differences in nutrition literacy profiles based on gender, the influence of intensive coaching from wellness trainers on changes in wellness indicators and see the relationship between nutritional literacy a person has with his wellness indicator.

2. Method
This research used experimental method that described on nutrition literacy program by these steps: (1) measuring respondent initial condition (2) Providing treatments that were giving health and balanced nutrition (3) Providing intensive and continuous education and assistance (4) final measuring after treatment.

Qualitative data classified by age, gender, work background, daily activities and other aspects, through interview guidelines. The quantitative data respondents included water percentage in the body, muscle mass and body fat percentage obtained by using Bio-impedance tool or body composition measurement. Respondents involved in this research were 30 members, 16 female respondents (FR) and 14 male respondents (MR).

The data were analyzed by 2 steps. The first step was recorded data of body wellness (water in body, muscle, and fat) before and after treatment. Data’s changing before and after treatment were calculated using N-gain analysis from Hake [16]. While educational process data and level of understanding respondents to the concept of nutrition science were collected through nutrition literacy instrument test containing questions about science concept related to the importance of water and the adequacy drinking amount the body needs, the importance of protein and muscle formation, information about fat types in the body and the limits of its needs. Each respondent's answer was assessed by assessment rubric. Each respondent's answer was given a score of 0 to 3. (0 = no answer / no idea at all, 1 = right answer but very minimal, 2 = most true answer, and 3 = answered comprehensively and correctly).

3. Result and Discussion
Based on analyzing data, the results gained in this research are: (1) the level of nutrition respondents, (2) increasing level of wellness respondents’ profile and (3) relationship between nutrition literacy and wellness level.

3.1. Nutrition Literacy Respondents’ Profile
Figure 1 and 2 showed nutrition literacy respondents’ profile on male and female
Based on figure 1 and 2, there is no difference male and female nutrition literacy respondent. Respondent literacy profile towards water needs, muscle mass and fat in body show variant score range 0-6. Mean score literacy on water needs shows the highest score, 4.5 for female and 4.8 for female. While the lowest literacy is indicated in the wellness indicator body fat levels. Literacy indicators of body fat levels have a high degree of difficulty.

Actually, the instrument used to measure the level of nutrition literacy contains general information that is easy to access. However, references to nutritional information sources depend also on age, social relations, resources, and electronic literacy [17]. Much evidence has shown that the capacity of individuals to acquire, process, and understand information is needed to make sound health decisions [18]. Even previous studies have shown that consumers generally prefer to read information or brief statements attached to a product rather than reading longer and complex nutrition information [19]. Therefore, in this study, increasing literacy through education and intense guidance by a trainer. Advice or coach suggestions about a healthy diet including meal plane will be heard by respondents [20].

3.2. Wellness Level Body Changes
The result of analyzing data changes water needs, muscle mass and fat body on all of the respondent showed figure 3.
Figure 3. Characteristics of Increasing Water Content, Muscle Mass and Fat Content on Body

Figure 3 showed all of the respondents got increasing water content, muscle mass and fat content on the body. Water content on body percentage for female increased about 0.5% and for the male was 1.1%. Based on data interview daily found the fact that the average amount of drinking water consumption of men more than women. Theoretically, the percentage of water content in the body for men is 55% -65% while the percentage of water content in the female body is 50-60%.

For muscle mass data, both men and women were decreasing. For women, there was a significant decreasing in muscle mass about 1.2%, while for men was 0.3%. In theory, through the nutrition literacy program is expected to have positive changes in muscle mass, but the measurement result at the end of the program was decreasing. Through interviews with respondents who experienced a decrease in muscle mass, it was found that the cause of muscle mass loss was due to two things, namely lack of protein intake during the program (due to not following the recommended meal plane) and lack of exercise. It is not unusual for previous studies to report that health literacy hardly determines the level of customer compliance with diet and other nutrients. [21] However, although health literacy is not related to health risk behaviors, it is important to introduce current health literacy issues spreading health messages to the community [22].

For data of decreasing body fat levels, both men and women showed positive results. women showed a decreasing body fat by 0.7% while men were 1.3%. This positive result is not strange because in theory if the pattern of eating and respondents lifestyle either (nutrient literacy movement programs) including raising the amount of daily water consumption, then gradually the amount of body fat content of a person will decrease.

For all the measured wellness data, generally, the results obtained by the male group were better than the results obtained by the women’s group. However, basically, both men and women, if the condition of their wellness changed, then the nutritional intake will change too [23].

3.3. Correlation Between Nutrition and Wellness Level

The result of data processed correlation between literacy ability and increasing wellness level respondent shown in picture 4. For the relationship between nutrition literacy about water and wellness level aspect of the fulfillment of water requirement obtained positive relation, good for woman group (0,05) or group of men 0.07). This means that although the program participant’s literacy towards water concept was low, but not for the level of wellness on the aspect of the fulfillment of water needs.
The correlation between the nutritional literacy of the protein aspect and the muscle mass with the wellness level showed positive (0.40 and 0.24). This means there was a relationship between literacy level and results of the program although the average muscle mass of respondents decreased. Similarly, the literacy relation of scientific concepts related to body fat with changes in the level of fat content of the program (0.65 and 0.26). This relationship shows that the literacy on fat ranging from the type of fat, sources of foods containing fat and the impact of fat consumption on the body of a person was also related to the decision of a person in consuming foods containing fat. It is natural that some countries are very concerned about the quality of the oil consumed because it greatly affects the health of the community [24].

Based on data result that nutrition literacy was important for public health, so nutrition literacy program should be encouraged especially for school-age children. The low understanding of literacy of school children on nutrition makes them indiscriminate. One of the programs that can be done by the school feeding program. This program can help improve the wrong diet and eating habits of schoolchildren [25]. Consequently, all of program nutrition literacy by providing balanced nutrition and guided education can improve the quality of public health [26]. Therefore, the development of educational and training materials is absolutely needed [27]. Through planned, measurable, massive and sustainable education programs supported by government policies, nutrition literacy programs will successfully reduce the risk of degenerative diseases caused by unhealthy lifestyles and poor diet.

4. Conclusion
This study concludes that nutritional literacy of each person was different. Differentiation of people nutrition literacy affects the level of physical wellness. Nutrition literacy program has been intended so that each person will be more aware of the nutrients he/she consumes. So that someday, it will change the wellness level of individually and then it will change the wellness level of society and community.

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