The Relationship between Nutritional Knowledge and Body Image with Eating Behavior

Rima Melyana Anjelita[1]*, Satwika Arya Pratama[2], Amalia Ruhana[3], Noor Rohmah Mayasari[4]

[1234]Nutrition Study Program, Faculty of Sports and Health Sciences,

Universitas Negeri Surabaya, Indonesia

*Email: rima.20002@mhs.unesa.ac.id

ABSTRACT

Background: Eating behavior can affect the health condition of a person's body. Nutrition knowledge determines a person's behavior when choosing the food to consume. In addition to nutritional knowledge, a person's view of their body image also affects their eating behavior. This study aims to determine the relationship between nutritional knowledge and body image with eating behavior in the Ambassadors of the Faculty of Clothing, State University of Surabaya (Unesa). **Methods:** This type of research is cross-sectional. The sample in this study is all Unesa Faculty Ambassadors, totaling 95 respondents. Data collection was carried out by providing test sheets and questionnaires to respondents. Test sheets for nutritional knowledge, questionnaire (MBSRQ-AS) Multidimensional Body Self-Relation questionnaire appearance Scales for body image, and questionnaire (AFHC) Adolescent' Food Habit Checklist for eating behavior. The statistical test used is the Chi-square test. **Results:** The results showed the p-value value in each research variable, namely nutritional knowledge and eating behavior (0.215), while the variables of body image and eating behavior (0.000). **Conclusion:** The conclusion is that there is no relationship between nutritional knowledge variables and eating behavior; there is a significant relationship between body image variables and eating behavior.

Keywords: nutritional knowledge, body image, eating behavior

INTRODUCTION

Food is a source of energy for living things and is vital in developing, maintaining life, and reproduction. Generally, food is an energy source, regulates the body's metabolism, and builds (Henryani, 2022). Nutrients in food are divided into several groups based on their functions: carbohydrates, fats, proteins, vitamins, and minerals. Living things cannot survive without food because humans can become depressed when they are hungry, so they are not able to live their lives well, and they will do eating behaviors to avoid hunger (Rosita Dewi, 2015).

Eating behavior is one of an individual's responses to food as the primary need of life (Fajryani, 2022). According to (September, 2020), eating behavior is defined as a condition closely related to how often a person consumes food, a person's eating habits, and how a person chooses the food to be consumed. Eating behavior is not only related to quantity, such as portion and frequency of eating, but also related to the motivation behind eating food, food choices, and reasons for stopping eating. Cognitive factors related to eating habits, beliefs, emotional needs, and environmental elements such as economic conditions, environment, lifestyle, culture, and religion can affect the reasons an individual chooses food (Rosita Dewi, 2015).

Nutrition knowledge is a person's ability to understand information related to the nutritional content of food, the body's dietary needs, and its impact on health. This knowledge includes understanding food groups, nutritional composition, nutritional needs based on age and conditions, and certain foods' positive or negative effects (Magdalena et al., 2020). In addition to cognitive factors, *body image* also affects eating behavior (Laksmi et al., 2018).

Body image is how a person sees themselves and describes themselves in their mind, known as body image. This includes beliefs regarding appearance, body shape, weight, and perception of their body as tall or short (Setiyani, 2020). Almost everyone wants a proportional body shape (Amraini et al., 2020). A person's dissatisfaction with their body shape can lead to the possibility that a person may limit or change their eating behavior (Fajryani, 2022). The negative image of the form is a wrong view or perception of one's body shape, which is considered unattractive. On the other hand, the image of a positive form is the correct view or perception where a person is proud of himself so that he wants to reward their body. People who are satisfied with their body shape feel comfortable and confident. On the other hand, a person dissatisfied with his body finds it difficult to accept the state of his body, which hinders him from building a positive relationship with his social environment (Damayanti, 2016).

Based on research conducted by (Amraini DKK, 2020) indicates that respondents tend to have a negative body image; 51.5% of respondents and 48.5% show a positive body image. According to Hamdani in 2019, a person's relative perception of their body shape compared to their actual body shape is a way to measure judgment *of body image*. Women and men pay attention to how they see their bodies, which causes them to feel satisfied or dissatisfied with their body image. The influence of job demands exacerbates this, especially for those who work as models. Type *Fashion* Professional Show *body images* that are more damaging than non-model samples. They also tend to pay more attention and maintain *body image* (Fauzi, 2021). According to previous research conducted by (Anindita, 2021), Models should regulate their daily eating behavior by eating a lot of fiber-rich foods, namely fruits and vegetables, reducing fatty foods and carbohydrates, and consuming more vitamins and minerals to maintain weight. Even if the model appears in *Catwalk* 3 (three) days before, they must try their best to fast so that their waist and abdomen match the clothes to be used and attract the attention of the audience and designers.

Several studies examine the relationship between nutrition knowledge and *the body

image with eating behavior, one of which is research conducted by Rengga in 2022, shows that an individual's behavior in choosing food to be consumed is influenced by the level of nutritional knowledge he has. Combining eating behavior with nutritional information requires cognitive processes to develop health and nutrition knowledge (Gultom et al., 2020). Eating behavior changes are one way to change unwanted or disliked appearances (Hadi & Meirina, 2019). Based on research conducted by Rengga and Christiana in 2022 with respondents consisting of 54 men and 54 women

of early adulthood in Kendari City, it was found that most of the subjects were not satisfied with their *body image*.

Faculty ambassadors are *a faculty's role models and pay attention to their body image*. Faculty ambassadors consist of several pairs of men and women who, of course, have a perception of their body size and shape. The initial survey conducted on 16 Unesa Selingkung Faculty Ambassadors for the 2021-2022 term obtained the results of 9 respondents (56.3%), of which had a negative body image view and 7 (43.8%) had a positive *body image.* A total of 12 respondents (75%) had poor eating behavior, and 14 respondents (93.8%) had good nutritional knowledge. Based on the above background, the researcher wants to determine the relationship between nutritional knowledge, body image, and eating behavior in faculty ambassadors around Unesa in 2022.

METHOD

This research is quantitative and uses a cross-sectional design. This research was conducted at the State University of Surabaya (Unesa) Campus in February-March 2024. The population in this study is the faculty ambassadors around Unesa for the 2023-2024 term. The sample in this study is taken from all populations, which is 95 samples with 48 boys and 47 girls. The inclusion criteria in this study are faculty ambassadors willing to become respondents by signing *an informed consent sheet*. The exclusion criteria in this study are to be excluded from the faculty ambassador association before the term of office ends. The independent variables in this study are nutritional knowledge and *body image*. The bound variable in the research is eating behavior. Data collection was carried out by providing test sheets and questionnaires to respondents. Test sheets for nutritional knowledge, questionnaire (MBSRQ-AS) *Multidimensional Body Self-Relation questionnaire appearance Scales for body image,* and questionnaire (AFHC) *Adolescent' Food Habit Checklist* for eating behavior. The data obtained from each variable was analyzed using the *Chi-square* statistical test. The analysis carried out was univariate analysis and bivariate analysis to determine the significant relationship between independent variables and bound variables.

RESULTS AND DISCUSSION

Based on the data on the age characteristics of the respondents, it can be seen that of the 95 respondents, as many as 52 (54.7%) are 19 years old, 23 (24.2%) are 20 years old, 14 (14.7%) are 21 years old, 6 (6.4%) are 22 years old. Based on gender characteristic data, it can be seen that 48 (50.5%) respondents were male, and 47 (49.5%) were female. Based on the data on the characteristics of the faculty, it can be seen that 10 (10.5%) respondents came from Ambassadors of the Faculty of Social Sciences and Law, 12 (12.7%) came from Ambassadors of the Faculty of Economics and Business, 16 (16.8%) came from Ambassadors of the Faculty of Engineering, 12 (12.7%) came from Ambassadors of the Faculty of Mathematics and Natural Sciences, 13 (13.6%) came from Ambassadors of the Faculty of Vocational Sciences, 10 (10.5%) came from Ambassadors

of the Faculty of Sports and Health Sciences, 12 (12.7%) came from the Ambassadors of the Faculty of Education, 10 (10.5%) came from the Ambassadors of the Faculty of Languages and Arts.

Table 1. Variable Category Distribution

Variable	Category	Frequency (n=95)	Percentage (%)
Nutrition Knowledge	Good	64	67,4
	Enough	18	19
	Less	13	13,6
Body image	Positive	51	53,7
	Negative	44	46,3
Eating Behavior	Good	55	57,9
	Bad	40	42,1

Nutrition Knowledge

Based on the distribution of nutrition knowledge assessment categories in Table 1 above, it can be seen that of the 95 respondents, 64 (67.4%) respondents have good nutritional knowledge, 18 (19%) respondents have sufficient dietary knowledge, and 13 (13.6%) respondents have insufficient nutritional understanding. Most of the respondents had good dietary knowledge.

Body image

Based on the distribution of body *image categories* in Table 2 above, it can be seen that from of the 95 respondents, 51 (53.7%) had a positive body image, and 44 (46.3%) had *a negative* one.

Eating Behavior

Based on the distribution of eating behavior categories in Table 3 above, it can be seen that of the 95 respondents, 55 (57.9%) respondents had good eating behavior, and 40 (42.1%) had terrible eating behavior.

The Relationship between Nutritional Knowledge and Eating Behavior

Table 2. Results of the Analysis of the Relationship between Nutritional Knowledge and Eating Behavior

Knowledge Nutrient	Eating Behavior				Total		*p-value*
	Good		Bad				
	N (56)	%	N (39)	%	N (95)	%	
Good	34	35,8	30	31,6	64	67,4	0,215
Enough	12	12,6	6	6,3	18	18,9	

Less	10	10,5	3	3,2	13	13,7

The results of *the Chi-square* test of nutritional knowledge and eating behavior variables with a significance level of α= 0.05 showed a value of p=0.215 (p>α) so that it can be concluded that h1 is rejected, which means there is no significant relationship between nutritional knowledge and eating behavior. The analysis showed that most respondents with good nutrition knowledge had good eating behavior (35.8%). Respondents with sufficient nutritional knowledge mostly had good eating behavior (12.6%). Respondents with low dietary expertise also had good eating behavior (10.5%). Thus, it shows the tendency of respondents to have good eating behavior even with a lack of knowledge. This does not follow Bloom's theory of 3 (three) taxonomic domains, namely respondents' nutritional knowledge, which is the cognitive domain, does not affect respondents' eating behavior, where behavior is included in the psychomotor realm.

The cognitive realm includes thinking abilities shown through intellectual aspects such as knowledge, which then affects the psychomotor realm, where an individual will apply his theory of knowledge to absolute actualization (Magdalena et al., 2020). Nutritional knowledge is a person's ability to recall what is contained in food and how those nutrients benefit their body. Nutritional knowledge is a cognitive process that associates nutritional information with eating behavior. The psychomotor realm is related to skills or the ability to act after an individual receives knowledge of specific learning outcomes (Intantiyana et al., 2018). In this case, it can be concluded that respondents with a good level of nutritional knowledge should have more good eating behavior, and vice versa; respondents with a low level of nutritional knowledge will have more bad eating behavior.

This research is in line with research conducted by Setyorini (2016), which showed that respondents with a good level of knowledge tended to have destructive eating behaviors (51.6%). Respondents who had a good level of nutritional expertise had not applied it to good eating selection behavior. Respondents' knowledge of nutrients needed by the body will impact food selection behavior. An individual who knows about nutrients does not necessarily change how they eat. They know the nutrients the body needs but have not applied them daily. This can be caused by various things, such as changes in the availability of family food, both in the quantity and quality of food, changes in socioeconomic conditions that cause a shift in diet that affects lifestyles, and technological advances in the food industry that make food available quickly and with a satisfying taste. If people understand their nutrition better, they will better choose the foods they consume and vice versa. Similarly, a study conducted by Berliandita and Hakim in 2021 shows that most students with good nutritional knowledge do not have good eating behavior either. Most students who understand the importance of nutrients for the body do not apply this understanding to their daily lives, so many students' eating behavior is included in the category of bad eating behavior. Increasing knowledge about nutrition, implementing a healthy daily diet, and understanding the factors that affect diet can improve a person's health. Nutrition knowledge will help students choose and manage their diet (Berliandita & Hakim, 2021).

The Relationship between *Body Image* and Eating Behavior

Table 3. Results of Analysis of the Relationship between *Body Image* and Eating Behavior

Body image	Eating Behavior				Total		p-value
	Good		Bad				
	N (56)	%	N (39)	%	N (95)	%	
Positive	44	46,3	5	5,3	49	51,6	0,000
Negative	12	12,6	34	35,8	46	48,4	

The results of *the Chi-square* test of *body image* and eating behavior variables with a significance level of α= 0.05 showed a value of p=0.000 (p<α) so that it can be concluded that h1 is accepted, which means that there is a significant relationship between *body image* and eating behavior. The analysis showed that respondents with a positive body image category had good eating behavior (46.3%) and bad (5.3%). Respondents with a harmful *body image* category tended to have bad eating behavior, namely (35.8%) and good eating behavior only (12.6%), so it can be concluded that respondents who have a positive *body image* tend to have good eating behavior and vice versa, respondents who have a negative *body image* tend to have bad eating behavior. *A negative body image* indicates a person's dissatisfaction and lack of confidence, so his mindset will lead to poor eating behavior to get a proportional body without paying attention to the nutritional needs of the body (Laksmi et al., 2018).

This research aligns with the results of Laksmi et al. (2018), which showed a meaningful relationship between *body image* and eating behavior. Of respondents with a positive *body image*, 94.1% (32) had good eating behavior, while two (5.9%) had bad eating behavior. On the other hand, of respondents with a negative *body image*, 63.3% (19 people) had terrible eating behavior, while 11 people (36.7%) had good eating behavior. Poor eating behaviors, such as eating irregularly either in terms of timing, frequency, or type of food, and excessive weight loss diets, can even lead to eating disorders such as *anorexia*, bulimia, and *binge eating*. Respondents with a negative body image reduced their meals to less than three times a day, such as avoiding breakfast. This shows that negative *body image* is related to emotional eating, where if a person feels dissatisfied with their body shape, they will use food as a way to overcome negative feelings, which can eventually lead to mental disorders. They reduce the consumption of several foods, such as cereals, rice, pasta, fatty foods, and oils, as well as drinks containing soda and chocolate. This can lead to a smaller amount of energy consumed than the amount consumed by a person with a positive *body image*, where they do not need to reduce or avoid certain foods.

This research is in line with research conducted by Fajryani in 2022, which showed that respondents with a positive *body image* tended to have good eating behavior (54%). Respondents who had a negative *body image* tended to have bad eating behavior, as much as (51.8%), so it can be said that there is a relationship between *body image* and eating behavior. This research is in line

with research conducted by Yusniar and Noerfitri in 2022, showing a significant relationship between *body image* and eating behavior. The analysis of the relationship between body image and students' eating behavior found that 99 people (54.4%) with negative body image had terrible eating behavior. Meanwhile, there *were* 52 students with a positive body image who had bad eating behavior (41.9%). Students with a negative *body image* had a 1,664 times higher risk of having lousy eating behavior compared to those with a positive *body image*. This is done to get the ideal body, so sometimes it impacts the intake of nutrients; one factor affecting eating behavior is *body image.* Respondents who have a positive *body image* will have good eating behavior and vice versa; respondents who have a negative *body image* tend to have lousy eating behavior (Gusnelly, 2017)

CONCLUSIONS

This study concluded no relationship between nutritional knowledge and eating behavior in the Unesa Faculty Ambassadors. However, there is a relationship between *body image* and eating behavior in Unesa Ambassadors of the Faculty of Inclusion. The researcher has a suggestion for the Ambassador of the Faculty of Unesa Researcher so that their nutritional knowledge can be applied in daily eating behavior and that they do not think negatively about *body image* so that they can use good eating behavior in daily life. The next suggestion for researchers is to research eating behavior by exploring other factors that can affect eating behavior. Research on eating behavior should also be conducted with direct observation, not through questionnaire instruments, because of the limitations of this study, namely the measurement of eating behavior, which is carried out indirectly through questionnaire instruments, where each instrument has an element of subjectivity.

REFERENCES

Amraini, A., Yanti, D.E. and Sari, N. (2020a) 'The Relationship of Body Image, Nutritional Knowledge and Eating Behavior to the Nutritional Status of Adolescents at SMA Negeri 5 Metro City in 2017', *Jurnal Dunia Kesmas*, 9(2). Available at: https://doi.org/10.33024/jdk.v9i2.2916.

Anindita, S.M. (2021) 'Model Remaja Putri: *Body image* dan Bulimia Nervosa', *Muqoddima Jurnal Pemikiran dan Riset Sosiologi*, 2(1), pp. 19–36. Available at: https://doi.org/10.47776/mjprs.002.01.02.

Berliandita, A.A. and Hakim, A.A. (2021) 'Analysis of Nutrition Knowledge and Eating Behavior in Students of the Class of 2017 Unesa Sports Science Study Program', *Indonesian Journal of Kinanthropology (IJOK*), 1(1), pp. 8–20.

Fajryani, N. (2022) 'The Relationship between Body Image Perception and Women's Eating Behavior at SMA NEGERI 1 Watampone'.

Fauzi, H. (2021) 'The Effect of Fat Talk on *Body Image* in Early Adult Female Models.'Available at: http://eprints.umm.ac.id/id/eprint/75391.

Gultom, G.S., Triawanti and Yuliana, I. (2020) 'The Relationship between Body Image Perception and Balanced Nutrition Knowledge with the Nutritional Status of High School Students in the Working Area of the Teluk Dalam Health Center,' *Homeostasis*, 3(3), pp. 411–418.

Gusnelly, R. (2017) 'The Relationship *between Body Image* and Eating Behavior in Adolescents', *Repository of UIN Sultan Syarif Kasim Riau*.

Hadi, A. and Meirina (2019) '*Body image* and diet in adolescent girls at SMAN 7 Bogor City', *Journal of Nursing, Bogor Nursing Study Program, Bandung Ministry of Health Polytechnic*, (1), p. 12.

Hamdani, D. (2019) 'The Relationship between Body Image and Balanced Nutrition Knowledge with Adolescent Nutritional Status in Sltp Negeri 2 Wungu Madiun', pp. 1–92. Available at: http://repository.stikes- bhm.ac.id/643/1/1.pdf.

Henryani, K. (2022) 'The Relationship between Nutritional Knowledge and *Body Image* with Eating Behavior in Male 1 Islamic Boarding School Darul Ulum Pekalongan City Students', *Braz Dent J.*, 33(1), pp. 1–12.

Intantiyana, M., Widajanti, L., & Rahfiludin, M. Z. (2018). The relationship between body image, physical activity and nutritional knowledge is balanced with the incidence of obesity in overnourished adolescent girls in SMA Negeri 9 Semarang City. Journal of Public Health (e-Journal), 6(5), 404-412.

Laksmi, zsa-zsa ayu, Ardiaria, M. and Fitranti, deny yudi (2018) 'The Relationship *between Body Image* and Eating Behavior and Exercise Habits in Young Adult Women Aged 18-22 Years (Study on Female Students of the Medical Study Program, Diponegoro University)', *Diponegoro Medical Journal* [Preprint].

Magdalena, I. *et al.* (2020) 'Three Domains of Bloom's Taxonomy in Education', *EDITION : Journal of Education and Science*, 2(1), Pp. 132–139. Available at: https://ejournal.stitpn.ac.id/index.php/edisi.

Rengga, O.L. and Soetjiningsih, C.H. (2022) '*Body image* Ditinjau dari Jenis Kelamin pada Masa Dewasa Awal', *Philanthropy: Journal of Psychology*, 6(1), p. 1. Available at: https://doi.org/10.26623/philanthropy.v6i1.4851.

Rosita Dewi, T. (2015) 'Descriptive Study: Eating Behavior in Students of the University of Surabaya', *Calyptra*, 3(2), Pp. 1–15. Available at: https://journal.ubaya.ac.id/index.php/jimus/article/view/1413.

Sari, N. (2019) 'Demanding Understanding of Bloom's Taxonomy', *Journal of Humanities*, 1(2), pp. 16–53. Setiyani, M.S. (2020) 'Overview of Eating Behavior and Nutritional Status in Female Students of the Department of Nutrition

Medan Ministry of Health Polytechnic', pp. 1–9.

Setyorini, K. (2016) 'The Relationship *between Body Image* and Nutritional Knowledge with Adolescent Girls' Eating Behavior (Case Study in Class X and Xi Sman 4 Semarang)', *Nutrition Science Study Program, Faculty of Medicine, Diponegoro University*.

Yusniar, A.S. and Noerfitri, N. (2022) 'The Relationship *between Body Image* and Nutritional Knowledge with Student Eating Behavior during the Covid-19 Pandemic at Stikes Mitra Keluarga at Stikes Mitra Keluarga ', *Nutri- Science: Journal of Nutrition, Food and Its Application*, 6(1), pp. 35–46. Available at: https://doi.org/10.21580/ns.2022.6.1.8691