



The health belief model on fast food consumption behavior among adolescents

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Abstract

This study aims to determine the level of adolescents behavior in consuming fast food and to investigate the influence of the Health Belief Model on fast food consumption behavior among adolescents in the city of Makassar, Indonesia. The sample in this study consisted of 400 adolescents aged 18 to 22 who consume fast food. Data collection was conducted using the Health Belief Model scale and the food frequency questionnaire by Suhardjo. The analysis technique used was linear regression analysis. The results of the study indicate that the levels of the health belief model and the behavior of consuming fast food among adolescents in the city of Makassar are in the moderate category, consuming fast food less than 3 times a week to 3 times a week. Another result of the study is the significant influence of perceived susceptibility, perceived severity, perceived benefits, perceived barriers, and cues to action in the Health Belief Model on the behavior of consuming fast food among adolescents in the city of Makassar.

Keywords: Health Belief Model, Fast Food, Adolescents.

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1. Introduction

At present, lifestyle changes have led to an increase in the consumption of fast food [1]. Fast food can be described as food prepared quickly, affordable, easily accessible, and also known as an alternative to home-cooked meals [2]. Fast food is sold in restaurants that provide fast service and is served in packaged form, making it convenient to take away [3]. During adolescence, there is a relatively high need for nutrients due to the growth phase [4]. Adolescents tend to have higher physical activity compared to other age groups [5]. Biologically, the nutritional needs of adolescents, in line with their activities, require more food containing protein, vitamins, and minerals [6]. Following societal modernization, fast food has become a lifestyle trend [7]. Fast food has almost become a favorite food because it can be quickly prepared and is considered affordable [1]. The most frequent consumers of fast food are teenagers. This unhealthy behavior can lead to overweight, which may cause diseases such as diabetes mellitus, hypertension, and heart disease [8]. Research findings from Arief[9] indicate that adolescents consume fast food or quick-service food about 4 times a month, some once a week, and others up to 2 times a week. This suggests that the level of fast food consumption among teenagers in the city of Makassar is relatively high. Arief's in 2011 [9] research also found that factors influencing adolescents to consume fast food include a preference for fast food, the availability of promotions, and peer influence. The study revealed that adolescents who consume fast food have

a level of knowledge categorized as fairly knowledgeable about the content of fast food and the impact of consuming fast food. However, even though these adolescents are aware of the impacts or effects of consuming fast food, which can have adverse effects on their health, this knowledge does not change their behavior to reduce fast food consumption. Based on the above issues regarding the behavior of adolescents consuming fast food, it is necessary to study why adolescents still consume fast food even though they are aware of the impact of consuming it. In addressing and explaining this issue, the Health Belief Model (hereinafter referred to as HBM) approach is used. The Health Belief Model is a concept that describes whether someone will engage in health-protective behavior or not. This approach to the Health Belief Model can change an individual's beliefs about the meaning of health, which can manifest as a change in behavior. Therefore, based on the background outlined above, the study titled "Analysis of the Health Belief Model on Fast Food Consumption Behavior Among Adolescents in the City of Makassar" becomes interesting and needs to be thoroughly examined concerning adolescent behavior in consuming fast food from the perspective of the five aspects of the Health Belief Model. Fast food is a type of food that is served conveniently with a simple and easily packaged method [10]. Fast food has an unbalanced nutritional content, with most containing high calories, fat, and excessive sugar and salt, but low in fiber [11]. Moreover, fast food is favored by many people because of its practical presentation, which

saves time, offers a favorable taste, and is affordable [12]. Fast food includes items such as fried chicken, hamburgers, and pizza[13]. According to Wulansari [14], fast food refers to instant consumable food. Consuming fast food over an extended period is detrimental to health due to the instant and unnatural food processing. The effects of consuming fast food may not be immediately felt, but rather emerge over the long term [15]. Although fast food consumption does not necessarily need to be avoided, it should be limited and reduced [16]. The Health Belief Model is a concept that explains the reasons individuals engage in or refrain from healthy behaviors [17]. In this context, the concept also elucidates an individual's considerations before adopting healthy behavior as a preventive measure against diseases. According to this theory, individual behavior is influenced by their perceptions and beliefs, irrespective of whether these perceptions and beliefs align with reality or not[18]. The theory is expressed in five aspects of individual thinking that influence decision-making regarding what is best for oneself [18]:

- a. Perceived Susceptibility: This is one of the stronger perceptions that encourage people to adopt healthy behavior.
- b. Perceived Severity: Relates to an individual's belief in the seriousness or severity of a disease.
- c. Perceived Benefit: Concerns the benefits that will be experienced by adopting the recommended behavior.
- d. Perceived Barrier: The perception of barriers to be faced is a significant factor in determining whether a behavior will occur. In adopting a new behavior, one must believe that the benefits outweigh the consequences of continuing the old behavior.
- e. Cues to Action: These are events, people, or things that prompt individuals to change their behavior.

Adolescence, as defined by Papalia [19], represents a transitional period from childhood to adulthood, encompassing the age range of 10 to 20 years. This phase is marked by profound physical, psychological, and social changes as individuals navigate the journey towards maturity. According to the World Health Organization (WHO), cited in Sarwono's work, the age span defining adolescence is acknowledged to be from 10 to 20 years[20]. This developmental stage is characterized by a multitude of transformations, both physically and psychologically. The adolescent experiences not only rapid physical growth but also undergoes cognitive and emotional developments. The intricacies of identity formation, autonomy, and the establishment of social relationships become paramount during this period. In examining the historical perspectives on adolescence, the concept of when a person transitions from childhood to adulthood varied across cultures and civilizations [21]. Some viewed it as a gradual process, acknowledging individual milestones and capabilities, while others considered specific biological events, such as the onset of reproductive capacity, as indicative of adulthood. The understanding of adolescence has evolved over time, shaped by societal norms, cultural influences, and advancements in psychology and developmental sciences [22]. Contemporary views recognize adolescence as a distinct phase with unique challenges and opportunities for growth [23]. The acknowledgment of the psychological, emotional, and social dimensions of adolescence has contributed to a more

comprehensive understanding of this crucial stage in human development.

2. Methods

2.1. Respondents

The study was conducted in 2023 in the city of Makassar, Indonesia. The total number of respondents in this study is 400 adolescents who consume fast food, with an age range of 18 to 22 years. All participants have given their consent for the implementation of this study, and the study has obtained approval from the ethics committee of the Hasanuddin University. The sampling technique used is non-probability sampling because the accurate population size is not known in this study. This technique is subjective as it does not have an equal probability of being selected. The non-probability sampling technique employed is incidental sampling, a technique applied to anyone the researcher encounters by chance and who meets the criteria for study subjects.

2.2. Research Instrument

The Health Belief Model scale used in this study consists of five aspects: Perceived Susceptibility, Perceived Severity, Perceived Benefits, Perceived Barriers, and Cues to Action, totaling 36 items. The scale was developed by the researcher based on the theory of Janz & Becker [17]. After conducting validity testing, 8 items were eliminated, leaving 28 items with a Cronbach's alpha reliability value of 0.878, which is considered high and reliable for use. This scale employs a Likert scale consisting of five response alternatives: Very Suitable, Suitable, Sometimes, Not Suitable, and Not Suitable at All. The food frequency questionnaire in this study was developed by the researcher. Questions in this study include the consumption of fast food more than once a day and once a day, which is categorized as High; consuming fast food 3 times a week and less than 3 times a week, which is categorized as Moderate; and consuming fast food less than once a week or never, which is categorized as Low. In this context, fast food includes items such as fried chicken, french fries, burgers, soft drinks, meatballs, dumplings, fish dumplings, and instant noodles.

2.3. Data Analysis Techniques

2.3.1. Descriptive Analysis

Descriptive analysis aims to provide an overview of the research data obtained from the subject group for categorization [24]. Descriptive analysis in research aims to understand the general description related to the variables used by examining the demographics of the research results (Table 1).

2.3.2. Assumption Testing

2.3.2.1. Normality Test

The purpose of the normality test is to minimize data bias and determine whether the research data is normally distributed or not. If the data is normally distributed, then the research data can be generalized to the population level. The normality test used is the Kolmogorov-Smirnov test in SPSS, with significance > 0.05, indicating that the data is normally distributed. Additionally, the researcher visually assesses the normal distribution of data by examining the Q-Q Plots, which are considered normal if the points cluster along a straight line (Table 2)

2.3.2.2. Linearity Test

The purpose of the linearity test is to determine whether there is a linear relationship between the research variables. The linearity test uses the ANOVA analysis method in the SPSS program, referring to the significance level when the deviation from linearity > 0.05 . Additionally, the significance level can be observed from the linearity value < 0.05 . Thus, it can be said to have a linear relationship (Table 3).

2.3.2.3. Hypothesis Testing

The data analysis used in this research includes univariate, bivariate, and multivariate analyses using the SPSS application. Univariate analysis provides a general overview of the research by describing each variable used, including the distribution of frequencies and single percentages related to the research objectives. This description can include statistical measures, tables, and graphs. Bivariate analysis is employed to analyze differences between the dependent and independent variables. The determination of the α (alpha) value used is 5%, and statistical tests through computer programs will display the p-value. The decision-making process involves comparing the p-value with the α (alpha) value, following the rule: if the p-value $< \alpha$, then H_0 is rejected; if the p-value $\geq \alpha$, then H_0 is accepted [25]. Multivariate analysis employs regression analysis techniques to identify the most influential variables (Table 4).

3. Results and discussion

3.1. Data Analysis Results

3.1.1. Descriptive Analysis

In this study, there are two variables: the dependent variable, fast food, and the independent variable, the health belief model. The total number of respondents in the study is 400 adolescents who consume fast food in the city of Makassar. Below are the results of the descriptive analysis of respondents based on demographics (Table 1 and Table 2).

3.1.2. Normality test

Based on the results of the normality test conducted, it shows that the Shapiro-Wilk value is $0.00 < 0.05$, which means that the Health Belief Model and Fast Food variables are normally distributed and can be used for further hypothesis testing (Table 3).

3.1.3. Linearity Test

The linearity test indicates that the Health Belief Model to Fast Food has a linear relationship with a significant linearity value of $0.000 < 0.05$ (Table 4).

3.1.4. Hypothesis Testing

The hypothesis analysis in this study utilizes multiple linear regression analysis. If the significance level is < 0.05 , H_1 is accepted and H_0 is rejected. Conversely, if the significance level is > 0.05 , H_0 is accepted and H_1 is rejected (Table 5 and Table 6).

3.2. Discussions

Based on the reasons for consuming fast food, it is evident that respondents have different motives for consuming fast food. In this study, they are categorized as follows: 131 individuals (12.8%) consume fast food for the

taste, 6 individuals (1.5%) for the price, 26 individuals (6.5%) for the comfortable restaurant environment, 20 individuals (5%) for brand preference, 42 individuals (10.5%) for socializing, 84 individuals (21%) choose a combination of provided reasons, and 91 individuals (22.8%) have other reasons for consuming fast food, such as feeling comfortable, affordability, etc. From these results, it is observed that the dominant reason for fast food consumption in this study is the taste, while the least common reason is the price. Based on the results of the hypothesis test conducted, it is evident that perceived susceptibility in the health belief model can influence fast food consumption behavior by 7.3%. There are factors that lead adolescents to choose fast food, including the fact that fast food tastes delicious due to its content of oil, salt, and sugar [26]. Additionally, adolescents consume fast food for reasons such as affordability, comfortable locations, brand preferences, and a desire for socializing. In this case, the low cost and substantial portion sizes offered by fast-food restaurants influence individuals to consume fast food. In the aspect of perceived severity in the health belief model, it can influence fast food consumption behavior by 3.4%. It is explained that as the perceived susceptibility increases, the preventive efforts also increase. This means that the more one is aware of the perceived susceptibility, the lower the behavior of consuming fast food, which is one form of preventive effort. When an individual perceives vulnerability to a disease due to unhealthy behavior, a belief is formed that they are indeed at risk. Therefore, the greater the perceived risk, the greater the likelihood of someone adopting healthy behaviors to reduce the risk of disease. In the aspect of perceived benefits in the health belief model, it can influence fast food consumption behavior by 18.7%. The higher the perceived severity by adolescents in believing in health, the lower the behavior of consuming fast food will be [27]. The perception of seriousness is often based on medical information or knowledge and can also stem from an individual's belief that they will face difficulties due to illness, which will impact their life in general. Consuming instant noodles involves understanding the perceived benefits when reducing or avoiding the consumption of instant noodles. When consuming instant noodles, individuals may incur costs for medical treatment when they are ill, and they can avoid illnesses by abstaining from instant noodle consumption [28]. As adolescents become more aware of the perceived benefits associated with the belief in health, the lower their tendency to engage in fast food consumption behavior. In other words, perceived benefits represent an individual's perception of the value or utility of a new behavior in reducing the risk of disease. People tend to adopt healthy behaviors when they believe that a new behavior will reduce their risk of developing a disease. In the aspect of perceived barriers in the health belief model, it can influence fast food consumption behavior by 15.5%. It is indicated that students who consume instant noodles understand the decrease in comfort when consuming instant noodles or when not engaging in unhealthy behavior. They will rethink or reconsider when they intend to consume instant noodles, which certainly includes unhealthy behavior. This is related to the individual's self-evaluation process of the barriers faced in adopting new behavior. The perception of the barriers to be experienced is a significant factor in determining whether a behavior occurs or not [29].

Table 1: Respondent Demographics

Demographics	Characteristics	Frequency	Percent (%)
Age	18 years old	19	4.8
	19 years old	56	14
	20 years old	71	17.8
	21 years old	83	20.8
	22 years old	98	24.5
	over 22 years old	73	18.3
Gender	Woman	297	74.3
	Man	103	25.8
University	UNHAS	114	28.5
	UMI	63	15.8
	UNIBOS	93	23.3
	UNM	75	18.8
	Other	55	13.8

Table 2: Categorization Levels

Variable	Categorization Levels	Frequency	Percent (%)
Health Belief Model	High	58	14.5
	Medium	286	71.5
	Low	56	14
Fast food	High	51	12.8
	Medium	315	78.8
	Low	34	8.5

Table 3: Normality Test Results

Variable	Shapiro-Wilk *	Information
Health Belief Model	0,000	Normally Distributed
fast food	0,000	Normally Distributed

Table 4: Linearity Test Results

Variable	Significance	Information
	Linearity	
<i>Health Belief Model towards Fast Food</i>	0,000	Linear

Table 5: Results of Linear Regression Analysis

Variable	R Square	Contribution	F*	Sig **	Inf .
<i>Perceived susceptibility towards Fast Food</i>	0.073	7.3%	31,277	0,000	Sig .
<i>Perceived severity towards Fast Food</i>	0.034	3.4%	13,887	0,000	Sig .
<i>Perceived benefits towards Fast Food</i>	0.187	18.7%	91,506	0,000	Sig .
<i>Perceived barriers towards Fast Food</i>	0.155	15.5%	73,250	0,000	Sig .
<i>Cues to action towards Fast Food</i>	0.026	2.6%	10,431	0.001	Sig .
<i>Health Belief Model towards Fast Food</i>	0.125	12.5%	57,758	0,000	Sig .

* R Square = Determinant Coefficient
 Simultaneous Regression Coefficient Test Value
 *** Sig = Significance Value F, P < 0.05

Table 6: Coefficient Value of Direction of Influence of Linear Regression Analysis

Variable	Constant *	B**	Direction of Influence
<i>Perceived susceptibility towards Fast Food</i>	155,426	-3,864	Negative
<i>Perceived severity towards Fast Food</i>	20,840	-2,861	Negative
<i>Perceived benefits towards Fast Food</i>	210.106	-9.4741	Negative
<i>Perceived barriers towards Fast Food</i>	166,174	-9,033	Negative
<i>Cues to action towards Fast Food</i>	119,387	-2.121	Negative
<i>Health Belief Model towards Fast Food</i>	215,323	-1,568	Negative

* Constant = Constant Value

**B = Influence Coefficient Value.

In the aspect of cues to action in the health belief model, it can influence fast food consumption behavior by 2.6%. Students who consume instant noodles are ready to take action to avoid consuming instant noodles again because they have obtained information about the consumption of instant noodles. This indicates that one action that can be taken to have a belief in health is to avoid consuming fast food frequently. It is also explained that these cues to action are events, people, or things that motivate individuals to change their behavior. Cues to action can come from information in mass media, advice from people around them, personal or family experiences, articles and others.

4. Conclusions

Based on the study results, it can be concluded that perceived susceptibility, perceived severity, perceived benefits, perceived barriers, and cues to action in the health belief model can influence the behavior of adolescents in consuming fast food. The overall direction of the influence is negative, meaning that the higher the perceived susceptibility, perceived severity, perceived benefits, perceived barriers, and cues to action, the lower the behavior of consuming fast food in adolescents in the city of Makassar.

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