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Predictors of Fast Food Consumption Based on Prototype/Willingness Model among Students of Yazd University of Medical Sciences

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ABSTRACT

Background: Consumption of fast food, as a consequence of the modern industrial society, has increased in recent years among teenagers and young people. The purpose of this study was to investigate the effect of fast food consumption on female students in Yazd University of Medical Sciences based on the Prototype/Willingness Model. **Methods:** In this descriptive-analytic study, 245 female dormitory students were selected from Yazd University of Medical Sciences by stratified sampling from six dorms. Data were collected using a valid, reliable, and self-reporting questionnaire including demographic information and constructs of Prototype/Willingness Model. To analyze the data, correlation, regression, and ANOVA were applied using $SPSS_{18}$. **Results:** Participants' maximum scores of intention with regard to non-consumption of fast foods, subjective norms, attitude, willingness, and prototype were 57, 53, 51, 67.5, and 66.2 percent, respectively. Intention to non-consumption of fast foods had a positive significant correlation with subjective norms, attitude, willingness, and prototype of fast food consumption. The combination of attitude and subjective norms accounted for 0.17 percent of the variance in intention. Moreover, attitude was the most significant predictor of intention ($\beta = 0.38$). **Conclusion:** According to the predictability of attitudes towards behavioral intention about fast food consumption, the individuals' negative attitudes should be enhanced towards fast food consumption in designing education programs for youth.

Keywords: *Fast food; Students; Prototype/Willingness model.*

Introduction

Over the last 30 years, fast food (already-prepared food) consumption has developed dramatically in the United States and Europe (Yarmohammadi *et al.*, 2011). These changes are

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the result of people's lifestyle changes. Currently, with the development of science and industry, people's lifestyles changed, indigenous food habits decreased, and prevalence of fast food consumption developed in most societies, including Iran (Dadipoor *et al.*, 2014, Fazelpour *et al.*, 2011).

Fast food and trans fatty acids are so fattening due to their high amounts of calories (Dadipoor *et al.*, 2014). According to the World Health Organization (WHO), in a healthy diet, less than 30 percent of energy should be fed from fats and unsaturated fats are preferred over the saturated fats. Industrial trans-fats processed food, fast food, fried food, and Pizza are part of an unhealthy diet (Fats, 2010, Hooper *et al.*, 2012, World Health Organization, 2003). Consumption of high-fat foods (including fast food) is often associated with obesity, increased cholesterol, cardiovascular disease, type 2 diabetes, and some cancers (Bowman *et al.*, 2004, Key *et al.*, 2004).

The prevalence of fast food is due to the fact that they changed the traditional family structure; fast foods are delicious, low-cost, and available (Driskell *et al.*, 2006, French *et al.*, 2000). In fact, today's standard for food consumption is taste and fast foods are more desirable and delicious for people considering their additives and salt, which provide a good flavor (Fazelpour *et al.*, 2011). Therefore, fast foods are very popular among teenagers and young people. Furthermore, research showed that about a third of these people have daily consumption of fast foods (Bowman *et al.*, 2004, Fazelpour *et al.*, 2011). In the study by Paeratakul, 37 percent of teenagers and 42 percent of children consumed fast foods (Paeratakul *et al.*, 2003). A study by Fazelpour et al. in Yazd indicated that 90.8 percent of participants used fast foods at least once a day. Moreover, consumption of already-made foods in students, self-employed, and unemployed individuals was higher than other groups (Fazelpour *et al.*, 2011).

The main goal of health education is to change the behavior of participants since behavioral acceptance including nutritional behavior depends on the individuals' beliefs. Selection of a model for health education is the first step in the planning process of educational programs (Mainbolagh *et al.*, 2012) In addition, some scholars believe that one reason for the failure of educational programs is the lack of attention to cognitive studies and their design, regardless of psychosocial models, which are considered as a specific framework for educational planning (Barati *et al.*, 2015). The incidence of obesity and other complications can be reduced by changing nutritional behaviors, especially by reducing fast food consumption (Brownell, 2005).

In terms of behavior change, models and theories provide guidelines to take measures about health education. These models and theories can answer the questions of program designers, such as why people do not behave desirably? How should the mentioned behavior change? and what factors should be considered in appraisal of programs? (Glanz *et al.*, 1990).

For the high-risk behaviors of young people, two decision-making hypotheses exist. The first hypothesis is that the decision making process includes an analytical and logical process. It states that the individual is treating by considering all parts of the behavior such as the theory of reasoned action (TRA) and the theory of planned behavior (TBP). However, the second hypothesis indicates that the decision-making process has a mental state and originates from the person's mental prototype in a particular situation. According to this model, the individuals' attitude towards a behavior changes positively and they perceive that the meaningful factors are leading them to conduct that behavior. Therefore, their intention increases to conduct that behavior. Furthermore, this model indicates that people have a set of basic beliefs (prototypes), which play a role in conducting high-risk behaviors. Individuals' attitudes to conduct behaviors are directly related to such basic beliefs or prototypes (Gerrard M, 2002). This model includes the constructs of attitude, subjective norms, behavioral willingness, as well as prototype and intents of behavior (Mirzaei Alavijeh *et al.*, 2013).

Several studies have been carried out using a model of perceptions/tendencies in predicting high-risk behaviors such as smoking

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(Morowatisharifabad *et al.*, 2012), drug use (Mirzaei Alavijeh *et al.*, 2013), unauthorized speed (Chaleshgar *et al.*, 2013), hookah consumption (Abedini *et al.*, 2014), alcohol consumption (Gerrard *et al.*, 2002), etc. Considering the daily consumption of fast foods by young people, especially students, the role of the prototype/ willingness model in predicting the high-risk behaviors, and the fact that no study has ever investigated this issue, the current study was conducted. The aim was to determine the predictors of the intention to non-consumption of fast foods based on the prototype/willingness model among the dormitory female students in Yazd University of Medical Sciences.

Materials and Methods

Participants and study design: This descriptive-analytic study was conducted on 245 dormitory female students of Yazd University of Medical Sciences in the academic year of 2017-2018. The sample size was determined using a previous similar research (Morowatisharifabad *et al.*, 2012) and the formula of $n = \frac{z^2 s^2}{d^2}$ with 95 percent confidence level, S = 8, and D =1. In order to collect the participants from the university dormitory students, all six dormitories of females in Yazd University of Medical Sciences were selected. Then, according to the approximate equal numbers of students in dormitories, 45 students were randomly selected from each dormitory. Later, The questionnaire was distributed among the eligible individuals (those with no restriction on fast food consumption). Students were asked to complete the questionnaires by self-report.

Measurements: The data collection tool was a researcher-made questionnaire designed based on a model of prototype/willingness, which included two parts of demographic information and the main questions based on the model's constructs. The second part of the questionnaire dealt with intentions intention to non-consumption of fast foods: 4 questions, prototype of a fast food consumer: 7 questions, one's attitude towards fast food consumption: 4 questions, subjective norms about not consuming fast food: 4 questions, and finally the willingness to consume fast food: 4 scenarios and 12 questions. The answers to the questions of model constructs were determined using the 5-point Likert scale (very high 2+, high 1+, average 0, low -1, and not at all -2), except for the willingness construct.

The validity of this questionnaire was determined by a panel of experts including five health education and nutrition experts and its reliability was confirmed according to the preliminary study conducted on 30 dormitory students with a Cronbach's alpha coefficient of 0.7.

Ethical considerations: the researcher referred to the selected student's room in the dormitory and explained the study goals. In this regard, all participants were informed and ensured about the study process and information confidentiality, respectively. In addition, all students indicated their willingness to cooperate in the study.

Data analysis: Data was performed by SPSS 18 and Pearson correlation test was run to determine the correlation between model components and regression to determine the predictability of the model with regard to the intention for not consuming fast food.

Results

The mean age of the participants was 24.7 ± 3.8 years. Of the total number of respondents, 202 (82.8%) were single and 42 (17.2%) were married. Considering the education level, 6 (2.4%) participants were undergraduate students, 147 (60%) were graduate students, 50 (20.4%) were studying to get the Masters' degree, and 10 (4.1%) were at the PhD level (**Table 1**).

Regarding the participants' mean scores of the prototype/willingness model constructs, the attitude toward fast food consumption (51%) and the willingness (67.5%) constructs gained the highest ranks (**Table 2**).

According to Pearson correlation test, a positive and significant correlation was found between the constructs of tendencies and intention to non-consumption of fast foods (P = 0.001, r = 0.27) ($P < 0.05$) (**Table 3**).

Regarding the predictability of intention to non-consumption of fast foods, the results of regression

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showed that attitude and subjective norms could predict 0.174 percent of the variance for not consuming fast foods. Attitude was the strongest predictor in this regard (**Table 4**).

Table 1. Frequency distribution of participants' demographic data

Variables		Number	Percent
Education	Under graduated	6	2.4
	Graduated	147	60.0
	Master	50	20.4
	Doctorate(PhD)	10	4.1
	General practitioner	32	13.1
Marital status	Single	202	82.8
	Married	42	17.2

Table 2. The participants' mean scores of the prototype/willingness model constructs

Variables	Mean ± SD	Mean percentage of max	Achievable score range
Intent	11.5 ± 7.07	57	4-20
Prototype	23.1 ± 4.9	66.2	7-35
Attitude	10.3 ± 3.6	51	4-20
Subjective norms	10.6 ± 3.6	53	4-20
Willingness	8.1 ± 1.6	67.5	3-12

Table 3. Correlation coefficient among structures of prototype/willingness model

	intention	prototype	attitude	Subjective norms
Intention				
Prototype	0.13 0.03[a]			
Attitude	0.37 0.001	0.09 0.1		
Subjective norms	0.16 0.008	0.19 0.002	0.03 0.6	
Willingness	0.27 0.001	0.19 0.002	0.36 0.001	0.23 0.001

[a]: P-value

Table 4. Regression analysis to predict the intention for not consuming fast food in constructs of prototype/willingness model

Independent variable	β	p-value	R^2	Dependent variable
attitude	0.38	0.001	0.174	Intention of non-use fast food
Subjective norms	-0.18	0.002		

Discussion

In this study, 97.1 percent of students used fast food. Fazelpour et al. conducted a study on fast food consumption in Yazd. They mentioned that the weekly fast food consumption in students was 18.8 percent and the highest consumption rate was

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attributed to other occupations (Fazelpour *et al.*, 2011). This discrepancy can be due to the variety among the studied participants and students' residence in dormitory. Studies by Nicklas and Driskell showed that students consumed fast foods more than twice a week (Driskell *et al.*, 2005, Nicklas *et al.*, 2001). In the study of Dadipour et al. in Bandar Abbas, university students used fast foods more than the students of other educational levels. They showed that 39.1 percent of students consumed fast foods once a week and 20.2 percent used fast foods more than once a week (Dadipoor *et al.*, 2014).

Based on the results of Pearson correlation test, the intention to non-consumption of fast foods had a significant correlation with attitudes, tendencies, and prototype towards fast food consumption. The positive correlation between these constructs suggests that higher desire for fast food consumption leads to the individual's higher intention to consume fast food. In the same line, positive attitudes toward a fast-food consumer, that is using words such as smart and regular to describe a fast-food consumer increase the intention of fast food consumption. In this regard, Morrovattisharifabad et al. reported that the intention for not smoking cigarettes had a correlation with the constructs of tendencies and prototype toward smoking, which is consistent with the results of this study (Morowatisharifabad *et al.*, 2012).

Application of linear regression analysis showed that subjective norms and attitudes could predict the intention of not consuming fast foods. In this study, attitude was a stronger predictor of the intention to non-consumption of fast foods. This result was consistent with the studiy by Yarmohammadi et al. on fast food consumption among students (Yarmohammadi *et al.*, 2011), the study of Chaleshgar et al. over the speed of unauthorized drivers (Chaleshgar *et al.*, 2013), and the study by Abedini et al. regarding the use of hookah in students (Abedini *et al.*, 2014). In the study of Dunn et al., the subjective norms were the strongest predictors of the intention to non-consumption of fast foods (Dunn *et al.*, 2011).

Conclusion

The results of this study showed that the intention to non-consumption of fast foods is predicted by the prototype/willingness model. Based on these results, in order to reduce the fast food consumption in students, as important future-makers of our country, more attention should be paid to their attitudes and subjective norms. Unfortunately, people's attitudes toward fast food have changed as a result of the changes in lifestyle. This should be taken into consideration by the relevant authorities in educational planning for Iranian families.

One of the limitations of this study was that sampling was conducted among Yazd medical students; therefore, generalizability of the results should be considered with caution. Furthermore, the information was collected using a self-report method that could affect the results of the study. Moreover, lack of assessing the individuals' attitudes toward traditional foods and comparing consumption of fast foods with traditional foods in the family was another limitation of the present study, which can be considered in future studies.

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Authors' Contributions

Mazloomy Mahmoodabad SS and Mohammad Yousefivardanjani Z, and Fallahzadeh H contributed in designing the study. Farrokhian A and Mohammadyousefi Vardanjani Z contributed in data collection and wrote the first draft of the manuscript. All authors studied and approved the final version of the manuscript.

Conflict of interest

The authors declare no conflict of interests.

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