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EFFECT OF NUTRITION INFORMATION DISCLOSURE ON CONSUMER EVALUATION BEHAVIOUR OF FAST FOOD ITEMS

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ABSTRACT

To study the effect of nutrition information disclosure on consumer's evaluation behaviour and purchase intentions of fast foods, a sample of 120 undergraduate students with equal proportions of boys and girls were randomly selected from Punjab Agricultural University, Ludhiana. The respondents were asked to respond on a 7 point rating scale having 5 statements pertaining to their perception about fast food consumption and purchase intention. The response was gathered pre and post declaration of lab analysis results. Respondents were put to disclosure of nutrition information by giving them the exact values of various nutrients found during laboratory analysis of fast foods. After the disclosure of nutrition information the participants was asked to re-evaluate their fast food purchases after 2-3 days on a 7 point rating scale without having access to their prior responses. On the basis of findings, it was concluded that disclosure of nutrition information of fast foods lead to a favorable evaluation with respect to specific nutrient content, perception of overall nutrition, perception of disease risk and purchase intention. Thus indicating that nutrition information disclosure can be promoted as a means for helping the consumers make healthier food choices.

Key words: Nutrition information disclosures, evaluation behavior, disease risk, purchase intention, healthier food choices.

INTRODUCTION

Nutritional labeling is a disclosure of nutritional content (calories, added sugar, total fat, trans fat, saturated fat, sodium and protein content) in product labels. Nutritional value should be provided in menu, menu boards, food wrappers and containers in fast food restaurant. This might restrict the quantity and choice of food among children of educated parents (Kaushik *et.al.*, 2011). Calorie menu labeling does not have the intended effect of decreasing calorie ordering and consumption from quick-service restaurants (Swartz *et.al.*, 2011). Consumers feel that fast foods outlets must provide additional information on nutritional values and hygiene conditions inside kitchen. Large percentage of the population purchase street foods and fast foods. This is of some concern when one notes the high prevalence of soft drinks consumption in terms of its association with Obesity and non-communicable diseases (Nelia *et.al.*, 2011). Most consumers are unaware of the high levels of calories, fat, saturated fat, and sodium found in many menu items. Provision of nutrition information on restaurant menus could potentially have a positive impact on public health by reducing the consumption of less-healthy foods. Calorie labeling on menus has been adopted as one approach to making consumers aware of the amount of calories they are consuming. Calorie labeling on menus has been shown to change consumer

behavior—for example, in one study, consumers were less likely to choose higher-calorie items when provided with calorie information on the restaurant menu (Burton *et.al.*, 2006). The nutrition information and the nutrient ad disclosures induce people's critical evaluations of fast food meals. These findings imply that posting nutrition information is highly necessary for both fast food consumers and fast food restaurateurs. For the fast food consumers, disclosing nutrition information can help consumers in selecting healthier menu items based on their critical evaluations. The consumers' healthful choices may contribute to reduce the prevalence of being overweight and obese (Hwang and Cranage, 2011).

MATERIALS AND METHODS

A sample of 120 undergraduate students with equal proportions of boys and girls was randomly selected from Punjab Agricultural University, Ludhiana. The respondents were asked to respond on a 7 point rating scale on 5 statements pertaining to their perception about fast food consumption and purchase. The response was gathered pre and post declaration of lab analysis results. The respondents was asked to keep a 7 days diary of their dietary intake and apart from their routine consumption this diary included their visits to fast food outlets, specific foods and drinks consumed, the place of purchase, meal prices and ratings of meal satisfaction. For each specific

fast food purchased data was calculated on 7 point rating scale (Hwang and Cranage, 2011) pertaining to:

- Perception of specific nutrient content
- Perception of overall nutrition
- Perception of disease risk
- purchase intention and
- product attitude

RESULTS AND DISCUSSION

ASSESSMENT OF CONSUMER EVALUATION BEHAVIOR ON FAST FOOD (BEFORE AND AFTER NUTRITION INFORMATION DISCLOSURE)

Table 1 shows the result of the assessment of consumer evaluation behaviour. One hundred and twenty students with equal proportion of boys and girls were assessed about their evaluation behavior on different fast food items. The evaluation of the assessment was done through pre test and post test of 7-point rating scale of the fast foods consumed which was based on 5 parameters namely: Perception of specific nutrient content, Perception of overall nutrition, Perception of disease risk, Purchase intention and Product attitude. To compare the assessment of consumer evaluation behaviour on fast food (before and after nutrition information disclosure), paired t-test had been applied.

PARAMETERS

PERCEPTION OF SPECIFIC NUTRIENT CONTENT

The data indicated that there was a significant increase in the perception of specific nutrient content among boys. The mean values for boys before nutrition information disclosure was 3.82 ± 1.11 and after the disclosure of nutrition information value was significantly increased to 4.83 ± 0.92 . Similarly, for girls, it has been found that there was a significant increase too. The average values before and after nutrition information disclosure were 3.33 ± 1.03 and 4.02 ± 0.96 respectively.

People eating at fast food restaurants underestimate the calorie content of meals, especially large meals. Education of consumers through calorie menu labeling and other outreach efforts might reduce the large degree of underestimation (Block *et.al.*, 2013). Another study found that the provision of calorie and fat content information on the menus did not modify the food ordering behavior for the majority of adolescents. However, the provision of the nutrition information should still be encouraged because it resulted in some calorie/fat reduction by some of the adolescents and it did not adversely affect the restaurants' revenue (Yamamoto *et.al.*, 2005).

PERCEPTION OF OVERALL NUTRITION

As evident from the table, there was a significant decrease in the perception of overall nutrition among both

boys and girls. The mean value before and after nutrition information disclosure were 4.66 ± 0.81 and 3.96 ± 0.91 (for boys). Similarly for girls, the mean values were 4.42 ± 0.96 and 3.72 ± 1.09 respectively. The significant decrease in the perception of overall nutrition indicates that there was a positive and favourable response from the subjects. After the disclosure of nutrition information, the respondents felt that a particular fast food item had no valuable nutrients but only high in calories and unsaturated fatty acids.

Younger age groups have much difference in their point of view towards significance of nutritional information in restaurant menu. Teenagers do not give importance for nutritional intake while dining out. But other age group considered it important while dining out (Ambaradar and Ghai, 2013). Although well received by consumers, FOP (front-of-package) labelling systems can lead to confusion depending on perceived understanding of the system used. The nutrient-specific systems tend to be preferred by most consumers; however, the overall impact on selecting healthier eating patterns has yet to be demonstrated (Savoie *et.al.*, 2013).

PERCEPTION OF DISEASE RISK

There was a significant increase in the perception of disease risk in both the groups before and after nutrition information disclosure as evident from table 1. For boys, the mean values were 4.98 ± 1.24 which significantly increased to 6.02 ± 0.67 after disclosure of nutrition information. Similarly for girls, the mean values before and after the disclosure of nutrition information were 5.00 ± 1.22 and 5.9 ± 0.83 respectively. After the subjects were put to a nutrition information disclosure, a positive increase in the mean values was seen with regard to the perception of disease. They have felt that consuming a fast food item which is high in calories and unhealthy saturated fatty acids will ultimately increase the disease risk.

The provision of information on trans fat, a nutrient that provides no known beneficial health benefits, in the Nutrition Facts panel influences consumers' product perceptions and purchase intentions. Using a sample of consumers suffering from diabetes, the authors show that trans fat knowledge and level (disclosed in a Nutrition Facts panel) interact to influence risk perceptions of cardiovascular disease. The results also indicate that responses of consumers who are at risk for heart disease are influenced by the interplay among consumer knowledge, trans fat level, and motivation to process nutrition information (Howlett *et.al.*, 2008).

There is strong research evidence that indicates that males and females process information differently. Results of our experiment indicate that males are more likely to carefully examine and use the nutrition facts panel for evaluation purposes compared to females. It was also shown that males' disease risk perceptions as a result of a food product consumption are more sensitive to the favourability of the information in the nutrition facts panel compared to females (Aboulnasr, 2010).

Table 1 - Seven - point rating scale of the fast food consumed

Parameters	Boys (n=60)			Girls (n=60)		
	Pre	Post	T value	Pre	Post	T value
1.Perception of specific nutrient content	3.82±1.11	4.83±0.92	6.74**	3.33±1.03	4.02 ±0.96	5.87**
2. Perception of overall nutrition	4.66±0.81	3.96±0.91	4.67**	4.42 ±0.96	3.72±1.09	5.15**
3. Perception of disease risk	4.98±1.24	6.02±0.67	6.66**	5.00±1.22	5.9 ±0.83	5.66**
4.Purchase intention	4.55 ±0.87	4.05±0.83	3.38**	4.75±0.85	4.40±1.27	2.16*
5.Product attitude	4.52 ±1.04	4.35±0.87	1.38 ^{NS}	4.58±0.94	4.45±1.33	1.12 ^{NS}

*Significant at 5%, **Significant at 1%, NS Non significant

PURCHASE INTENTION

The data indicated that there was a significant decrease in the purchase intention among the boys. The mean value before and after nutrition information disclosure were 4.55±0.87 and 4.05±0.83 respectively. Similarly, it has been found that there was a significant decrease in the purchase intention among the girls too with the mean values of pre and post tests 4.75±0.85 and 4.40±1.27 respectively. There was a decrease in purchase intention among the respondents ones they knew the nutritional composition of the fast foods. The respondents were now having a clarity that the fast foods were rich in calories and trans fat, that would ultimately have adverse effect on their health and would increase the disease risk. Thus, the purchasing frequency of fast food items had been reduced among the subjects.

The addition of calorie and nutrient information for dinner house items influenced attitudes, intentions, and choices. Purchase intention and choice decreased for less-healthy items that were worse than expected (hamburger platter and chef's salad), whereas they remained constant or increased slightly for items more consistent with expectations. However, when calorie and nutrient information were provided, there was a larger difference in disease-risk perceptions (Burton *et.al.*,2006).

PRODUCT ATTITUDE

Regarding the product attitude, there was significant decrease among both the groups. For boys, the mean values before the nutrition information disclosure was 4.52±1.04 and after the nutrition information disclosure the value was 4.35±0.87, which means there was insignificant difference. Similarly for girls, the mean values were 4.58±0.94 and 4.45±1.33 respectively, which

was found to be insignificant. Regarding the product attitude of fast foods among the respondents, a significant decrease indicates a negative reflections of their attitude towards buying a fast food items.

When nutrition information was influential in the decision making process, consumers chose food items averaging 30% less calories. Consumers who did not change their food selection based on nutrition information still indicated they found the information valuable and appreciated its availability (Anish and Carl,2015). Favorable nutrition information on a packaged food product or a restaurant menu item leads to favorable evaluations with respect to product attitude, purchase intention and perception of disease risk (Garretson and Burton,2000).

PRE DISCLOSURE OF NUTRITION INFORMATION

From the table 2 it is evident that for the first response i.e. Perception of specific nutrient content, there was a significant difference in the responses of boys and girls indicating that the boys had a better perception of specific nutrient content. The second response i.e. Perception of overall nutrition content, there was a significant difference in the responses of boys and girls indicating that the boys had a better perception of overall nutrition.

For the perception of disease risk, there was a non-significant difference in the responses of boys and girls indicating that there was no remarkable difference in the assessment that fast foods could induce disease risk. For the response of purchase intention and product attitude, there was a non-significant difference in the responses of boys and girls during pre assessment.

Table 2- Comparison of the assessment of consumers during pre and post disclosure of nutrition information of fast foods on a 7 point rating scale:

Parameters	Pre-assessment			Post-assessment		
	Boys	Girls	T value	Boys	Girls	T value
1.Perception of specific nutrient content	3.82±1.11	3.33±1.03	2.46**	4.83±0.92	4.02 ±0.96	4.38**
2. Perception of overall nutrition	4.66±0.81	4.42 ±0.96	1.53*	3.96±0.91	3.72±1.09	1.35 ^{NS}
3. Perception of disease risk	4.98±1.24	5.00±1.22	0.07 ^{NS}	6.02±0.67	5.9 ±0.83	0.84 ^{NS}
4.Purchase intention	4.55 ±0.87	4.75±0.85	1.26 ^{NS}	4.05±0.83	4.40±1.27	1.77*
5.Product attitude	4.52 ±1.04	4.58±0.94	0.37 ^{NS}	4.35±0.87	4.45±1.33	0.48 ^{NS}

*Significant at 5%, **Significant at 1%, NS Non significant

AFTER THE NUTRITION INFORMATION DISCLOSURE

For the first response i.e. perception of specific nutrient content, there was a significant difference in the

responses of boys and girls indicating that the boys had better perception regarding specific nutrient content. Also a significant difference was observed during post assessment in purchase intention between boys and girls

indicating that the purchasing frequency of fast foods was reduced when nutrition information disclosure of fast foods were made to the respondents.

The evaluative disclosure led to significantly less favourable consumer evaluations of selected fast food menu items than did the absolute disclosure; consumers who had high subjective nutrition knowledge and who were low BMI (i.e. people who have normal BMI) conducted significantly more critical evaluations of focal fast food meals with nutrient ad disclosures than did their counterparts (Hwang,2013).

CONCLUSION

Disclosure of nutrition information of fast foods leads to a favorable evaluation with respect to specific nutrient content, overall nutrition, perception of disease risk and purchase intention among the respondents.

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