

Emerging Research on Nutritional awareness and Health Claiming Food Packaging: Review Paper

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Abstract:

The customer should be aware of the food products that they are consuming on daily basis, Nutritional awareness plays a very important role in picking the right product for daily consumption. This research emphasizes on nutritional awareness of individual by conducting a thorough analysis of relevant literature gathered from the Scopus and web of data bases. The 70 empirical articles identified and analyzed below that this problem could be solved if customer have knowledge about food packaging.

Keywords: Nutritional awareness, food labels, FSSAI and food companies

I. Introduction

Health claims on food labels act as health message and have a role in communicating and educating the consumer about diet-related issues (Singer et al. 2006). Food labels give consumers an overall view of any packaged food product therefore it helps an individual in maintaining their daily requirement of healthy and nutritious diet. Food label information is very crucial for consumers to know what they are consuming and nowadays a healthy diet is precursor to avoid any type of non-communicable disease. Therefore, it could be stated that awareness and understanding could be crucial part of consumption process (Singla, 2010 p.89)

World health report 2002 states that most of the non-communicable diseases such as high blood pressure, high cholesterol, obesity etc. are majorly related with our diet and physical activity (World Health Report 2002). Recently consumers are growing interest in health related aspects so health claim or health related messages should not mislead people about nutritional benefits on food products (WHO, Global strategy on Diet, Physical Activity and Health, 2004). It also stated that the label should be clear and precise so that it does not hinder the food choices of consumers rather increase awareness among consumers.

To enhance consumer awareness, FSSAI has drafted a new Food Safety and Standards for Labelling and Display regulations 2019 which will add some new

labelling rules to Food Safety and Standards (Packaging and Labelling), 2011 for consumers to make healthy food choices. In the press release on 25 June 2019 it was drafted that nutritional information including calories, Saturated fats, added sugar, sodium per serve and RDA (recommended dietary allowance) would be displayed on front packaging of food product (www.fssai.gov.in). Another recommendation of committee was that Red color coding is mandatory on the front packaging for foods having High salt, High sugar, and High fat contents on the packaging and is to be implemented within three years and each food product should have barcode/GTIN (Global Trade Identification number) for health conscious consumers to provide additional nutrition information (www.fssai.gov.in).

Consumer awareness is very important factor for the manufacturers/marketers to rightly label the food products, improve marketing strategies and to follow all the guidelines issued by FSSAI, with the help of these protocols, manufacturers cannot misguide consumers with all these fake health claiming labels and using words like natural or high fiber etc. on wrongly labelled food product. Recently we are seeing a huge shift of consumers to correctly choose right food products for maintaining healthy lifestyle and one of the factors for this shift may be the pandemic which we are facing, as healthy diet is the key to avoid many unwanted diseases such as BP, Obesity etc. In National Family Health Survey (NFHS-4), it was stated that 21% of women and 19% of men are overweight which has increased from previous survey

and a recent World Bank study estimates that foodborne diseases in India cost approx. \$28 billion (Rs. 1,78,100 crore) every year (Financial Express, 2019). By this study it is clear that, consumers become negligent while purchasing food products hence it becomes very important for individuals to have adequate knowledge about nutritional components in food.

Correctly identifying the nutritional information/health claims on food label is very crucial nowadays because companies try to market their food products to tempt consumers. Basic understanding of nutritional facts such as (saturated and trans-fat, amount of sodium in food product (measured in mg), level of cholesterol, amount of vitamins, minerals etc., amount of sugar, dietary fiber etc.) each and every individual should possess to attain a healthy body.

Healthy eating is the cornerstone to prevent chronic diet-related diseases (Jebb, 2007). This statement clearly identifies that right eating is very crucial in maintaining health which prevents us from diseases. As stated above FSSAI is working in improving the food labels so that consumers can understand the labels clearly which will help them in healthy eating.

The label could concretely help us in protecting and improving our health, if our choices are supported by some basic knowledge of wholesome nutrition, based on balanced and varied diet and in wider perspective this may translate into reduction of obesity and chronic disease and significantly help public health in terms of costs for individual and medical systems (Violet et al., 2016)

Consumers found nutritional labels fairly difficult to comprehend (Singla, 2010). This is the main reason why consumers do not bother to read the labels. Nutrition facts on labels should be clear and precise and include all important information that will increase consumer awareness on food labels. Indian government has not made nutrition labelling mandatory for every product (Singla 2010).

II. Review of Literature

The literature on consumer awareness and intrusiveness on Nutritional knowledge and Health claims on food labels was studied to get a broader concept idea and a bit more relevant to support the present study.

1.1 Nutritional Awareness

This category of literature of review is all about

awareness on health claim food labels and consumer responses towards purchasing of food product according to their nutritional knowledge therefore

the first subcategory of awareness is General Awareness i.e. common knowledge about macro and micro nutrients that a majority of individuals are aware of. And based on this fact, in a study it was found that Health claims on food label are seen by consumers as useful and help them to choose right product, to maintain a healthy lifestyle (Williams, 2005) but due to lack of proper knowledge consumers don't like long and complex, scientifically worded claims on food labels and prefer easy and understandable split claims.

In another study it was revealed that Nutrition labeling information, such as nutrient and health containing claims and percentage of daily value that we consume can be used for choosing foods on the basis of nutrients present in the food and another perspective of this study was that as we have a common/general understanding towards labels therefore dieticians can help consumers to choose right food by calculating all type of food labelling (health claims, nutrient (macro and micronutrients), sugar, dietary fact set.) promoting healthy diet (Legault et al., 2004).

An Experimental study was conducted to evaluate Front-of-Package (FOP) nutrition and health claim labels awareness among consumers food choices for maintaining a healthy lifestyle and it was concluded that FOP labels help consumers to choose a healthy food option (Hagmann and Seigrist, 2020). Likewise another experimental study was performed which contradicts to previous mentioned study and states about consumer food choices in response to front-of-pack (FOP) nutritional labelling scenario and concludes that that FOP does not influence consumer choices to that extent but nutri-score works best for getting an insight on nutritional information on packaging (Vandevjver et al., 2020).

Second sub category of awareness is Brand specific awareness i.e. most of the individuals trust certain brands and find them healthy therefore trust all health claims on food labels and brands also roots for health benefits or claims about their product containing all nutritional advantage that an individual wants (For example if a person wants to buy packaged juice, there are various manufactures in market which presents several health claims but consumer will trust the health claim label on the brand for which they are loyal).

A study using an analytical approach showing effect of nutritional and health claim labelling on brand choice behaviour (Baltas, 2001) revealed about positive relationship

between nutrition information and cereal brands. Another descriptive study was performed to study the health conscious behaviour and brand loyalty of consumer towards a brand of green tea "Oishi Green tea" hence it was concluded that apart from health claims many more factors determine the market share of this particular green tea (Oke et al., 2016).

A case study on ready to eat foods i.e. oats brands was performed to understand consumer trust and how the consumer relates their knowledge about health claims and their choice of brand which they trust, in this study the author found out that 32.7% of individuals consume Quaker Oats and 22.7% of consumers prefer Saffolow (M Vasan, 2015). As oats are healthy substitute in breakfast and choice of many individuals maintaining a healthy lifestyle, so by his study it is clear that brand specific awareness is also very important factor in judging consumer awareness on nutrition and health claim food labels.

The third sub-category of awareness is self-selective awareness on health claim food labels, that is personal needs of individual will define their awareness on food label which means if an individual is diabetic then he/she will emphasize on sugar content on food label. An experimental study was performed to test that amongst sugar, saturated fat, salt etc. which is the most preferred requirement on the food label that consumers prefer to see and the results show that sugar percentage was the important nutrient that an individual sees on the food label (Anabtawi et al., 2020).

Another study indicates that saturated fat and salt had greater impact on decision than sugar and total fat (Scarborough et al., 2015). The studies stated above clearly identify that awareness on food label is somewhat related to the personal choice and needs of individual.

In a study it was noted that Nutrition and health claims create 'magic bullet' or 'halo' effects that lead consumers to believe that a food claim is healthier than it actually is (Orquin and Scholderer, 2015). Mixed results were obtained i.e. some claims mislead people but claims following all the guidelines of labelling agency were helpful for individuals selecting the right food product.

1.1.1 External Factors affecting Nutritional awareness

1.1.1.1 Food labelling guidelines/policies

In a descriptive study it was noted that for maximum effectiveness and increase in health consciousness of individuals the labelling of all the products is needed (Hagmann and Seigrist, 2020) hence it becomes very important for food

regulation authorities to label all the products correctly to ease consumer understanding level. In the above study it was noted that from various parameters of labelling, Nutri-Score on the food product was found as the most accurate choice for giving nutrition information (Hagmann and Seigrist, 2020).

Nutrition labelling can drive healthy food choices and intensive product reformulation (Brown et al., 2020). By this study it is clear that the regulations by food agencies is very helpful in making food choices by individuals. Food labelling has become a part of food systems infrastructure and yet there are challenges with governing this sector (Brown et al., 2020). Till (refer to total of free sugar content) on food packages helped consumers despite with a lack of knowledge to choose healthier food product (Anabtawi et al., 2020). Better targeted communication efforts are thus needed to make health claim effective in supporting informed food choices (Hung and Verbeke, 2019).

1.1.1.2 Health claims (Manufacture's role)

This category deals with the health claim packaging that tends to increase awareness among individuals and motivate them to choose right food product. In a study an author about the health and nutrition claims made on packaging create "health halos" that make foods appear healthier than they are, thereby leading to higher consumption yet lower perceived calorie intake (Chandon, 2012). In an experimental study the effects on nutrition claims made (e.g., 99% fat free, "low in calorie") on product package, product nutrition value levels, and during motivation process nutrition information (Keller et al., 1997).

Likewise another study featured the impact of nationally instituted nutrition labelling policy on fast food nutritional content (Joshua Reed, 2020). In this study it is clear that consumers prefer nutritional labelling on fast food products and this new trend increase nutritional labelling among individuals.

Another study focuses on salt reduction in diets of individuals by increasing awareness among them creating a slowdown in the rate of cardiovascular disease and it depends on the salt intake which spikes the sodium levels in our body. Moreover, to speed up the salt reduction progress from "awareness" to "action", key stakeholders need to take responsibility and agree on actions for executing product reformulation and creating consumer behaviour change programmes (Zandstra, Lion and Newson, 2016).

In the previous study it was about salt reduction

awareness strategies now in this study author focuses on fat and cholesterol labelling awareness among individuals (Reid and Hendricks 1994). In this study it was revealed that consumers believe that low fat is an important health claim label but interpretation of claims such as "low in saturated fat" etc. are misunderstood by consumers. On products high in sugar, most commonly used health claim symbols used by manufacturers are "good source of calcium", "reduce fat/low fat/trans-fat free" etc. are used to deceive consumers so that they neglect the fact that the product is high in sugar (Colby et al., 2010).

Another study was done on dietary fiber information and reactions of consumers towards this information and it was revealed that white bread or muffins labelled high in fiber was preferred choice of consumers (Mialon et al., 2002). By all these studies it is clear that whatever the trend is followed by companies, the health claim label has the potential in increasing awareness among individuals.

1.1.1.3 Marketing information (Marketer's role)

Marketing influences food purchasing and consumption behaviour (Colby et al., 2010). Consumers' nutritional awareness is highly dependent on marketing techniques related to food products.

Most of the food products are marketed claiming several health claims which sometimes increase the nutritional awareness and vice-versa. Nutrition marketing can be defined as any marketing of food or beverages using health or nutrition information beyond minimum requirements and health claim would fall under nutrition marketing (Colby et al., 2010). So it becomes very important for consumer to differentiate between fake and real labels, for ex. a product claiming "sugar-free" does not mean that product is really sugar free, it may have sugar in several forms such as maltose, fructose etc., therefore it is very important for individuals to have some sort of specific knowledge about ingredients in food.

Nutrition and health claims on FOP are a part of propaganda to mislead individuals about processed food products (Nestle and Ludwig, 2010). Many food marketing companies do not follow guidelines of FSSAI and give satisfactory clarification of their health claim, hence people with high knowledge of nutritional facts differentiate between real and fake but people with less knowledge are deceived by these companies.

1.1.2 Internal factors influencing nutritional awareness

1.2.2.1 Sociodemographic characteristics

Sociodemographic characteristics include age, gender, income and education level which greatly influence the nutritional awareness of an individual. Dillen et al. (2007) in his descriptive study clearly mentioned the role of socio-demographic factors and find correlation of these factors with nutritional awareness. Singla (2010) stated the level of food label use on the basis of various socio-demographic characteristics i.e. Gender, age and income level. Consumer with high education levels had a better understanding of diet disease related messages and positive attitude towards health messages on food labels (Fullmer, Geiger and Parent, 1991).

1.2.2.2 Health-related attributes

Health-related attributes are such as health status, special diet status and consumer motivation towards health i.e. belief in control of health. Health claims promise health benefits beyond basic nutrition but their impact on food selection is determined by consumer's motivation (Hunget al., 2017). Respondents with health motivation viewed the nutrition information on food products for longer and more often than respondents with taste motivation (Visschers, Hess and Seigrist, 2010). Health motivations show significant interaction with process claims on product evaluations (Chrysochou and Grunet 2014).

In another model based study it was noticed that Consumers with higher nutrition knowledge and/or higher health motivation looked longer at the nutrition and health claims (Steinhaus et al., Janssen and Hamm, 2019).

Nutrition labels are mainly used by consumers who are already engaged in health enhancing activities or have special diet status and have a limited effect on less health concerned consumers who have greater need to pursue healthier lifestyles (Cavaliere, Marchi and Banterle, 2017). Having hypertension increased rating related to product healthfulness and purchase intentions (Wong et al., 2013). Health status is closely related to nutritional awareness of individuals.

In a descriptive study it was found that consumer groups with low health orientation (specifically smokers, those who do not exercise regularly, and those with unhealthy body weight) show little interest in nutritional labels (Cavaliere, Marchi and Banterle, 2017).

1.2.2.3 Interest in nutrition

In a study it was stated that most consumers do not read label information (Madilo et al., 2020). The level of interest of consumers in using food label was higher when consumer purchases a product they had not used before and lower when consumer purchases a product from known brands (Besler et al., 2012). Consumer health awareness should be raised in order to increase the frequency of label use (Hees, Visschers and Seigrist, 2012). Frequency of label use, self-reported use of food labels, food label reading patterns and food choices are factors which correlates with nutritional awareness of consumers and food consumption behaviour.

1.3 Consumers attitude towards nutritional and health claim labelling

Consumers were favorable for all FOPLs with no significant differences between the different FOPLs (Vandevjvere, 2020). Front of pack nutrition labels are preferred by consumers to better identify healthier and less healthy products (Al-Jawaldeh, 2020). Food packaging labels attract consumers attention in stores and market areas, and communicates relevant nutrition information that allows the method to distinguish between food product alternatives (Madilo et al., 2020).

In an experimental study it was found that addition of a nutrient or health claim did not affect the likelihood of picking healthier food choices but did increase the likelihood of selecting less healthy food (Tatali et al., 2018). In another study it was found that perceptions of health benefits seemed largely based on prior beliefs about product rather than on specific information provided by claims (Williams, 2005). Consumers care the most about the products they purchase is the global quality rather than nutritional values (Viola et al., 2016).

1.4 Purchase Intentions

Nutrition and health claims (NHCs) have been found to influence perceptions of food and consumption behaviour (Benson et al., 2019). Nutritional health claims increase the health consciousness of individuals and in turn it affects the purchase behaviour of consumers towards food products. These perceptions and the characteristics of products displaying claims also impacted believability, as well as purchasing behaviour and consumption (Benson et al., 2019).

Food labelling provides information on important aspects about food products therefore providing a driving force to purchase the right food product (Tobi et al., 2020). In a descriptive study it was mentioned that Psychological factors such as

consumer's familiarity with foods carrying claims and belief in claims were most important predictors of perception (Benson et al., 2018).

In a descriptive study it was quoted about evaluation of the impact of health claims would ideally consider not only product purchase behaviour, but also changes in nutritional knowledge, awareness of diet-disease relationships, and ultimately impacts on total diet quality and health status (Williams, 2005). According to this study purchase intentions or

purchase behaviour of consumers is combination of variety of factors which ultimately lead consumer to buy a food product of their choice.

Nutrition information aims to enable informed consumer choices (Baltas, 2001). According to this study nutrition information on packs plays important role for consumers to choose food products efficiently and increase the demand of healthy food products and competition among manufacturers about nutrition quality of food products. Nutrition information indicates the nutrition attributes do matter in product choice decisions (Baltas, 2001).

III. Conclusion

To conclude, a unique and unprecedented event such as the pandemic in 2020 has impacted the individuals to stay healthy and increase awareness about food products. Now companies are also supplying healthy food to individuals. We investigated the sample literature by focusing on the research's annual trend, influential works, regional distribution, theoretical context, technique and modelling, and thematic analysis. On this score, the findings could serve as a guide to inform the service providers so that appropriate strategies can be developed to enhance digital payment services. In addition, a synthesis of prior discoveries allows researchers to avoid duplicating prior work and to uncover crucial gaps. This research is innovative in that it provides fresh incentives and recommendations for future investigations to fill the gaps in previously examined research.

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