Article **Journal of Nursing Techniques and Health**
December 2023, Vol.7 No.18 14-22

Parents' knowledge of nutritional labeling and its impact on food choices

Conocimiento de los padres de familia sobre el etiquetado nutricional y su impacto en la elección de alimentos

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DOI: 10.35429/JNT.2023.18.7.14.22 Received July 25, 2023; Accepted December 30, 2023

Abstract

The nutritional label is a tool that helps parents to make decisions about their eating plan, in order to make safe purchases. The objective was to analyze the knowledge that parents have about nutritional labeling and its impact on food choices, for which an observational, prospective and analytical study was used. A questionnaire made up of 14 questions was applied to 36 settlers from a community in the State of Zacatecas. As a result, it was obtained that 97% do know the nutritional information table, and of these 69% if it seems important to read and understand the label, which influences when making the choice of food purchases, more than half of the population considers that the current design greatly favors reading. It was concluded that although the majority of the population already knows it, it is of vital importance that the totality of this, in addition to knowing it, fully understand it and take into account all the nutrients or substances that may harm it and thus be able to choose the best products for their diet and that of the family and thus have a better nutritional status.

Knowledge, Nutritional Labeling, Food choice

Resumen

La etiqueta nutricional es una herramienta que ayuda a los padres de familia a tomar decisiones acerca de su plan de alimentación, con el fin de realizar compras seguras. El objetivo fue analizar el conocimiento que tienen los padres de familia sobre el etiquetado nutricional y su impacto en la elección de alimentos, para eso se utilizó un estudio de tipo observacional, prospectivo y analítico. Se aplicó un cuestionario conformado de 14 preguntas a 36 colonos de una comunidad del Estado de Zacatecas. Como resultado se obtuvo que el 97 % si conoce la tabla de información nutricional, y de estos el 69% si le parece importante leer y entender la etiqueta, la cual influye a la hora de realizar la elección compras de alimentos, más de la mitad de la población considera que el diseño actual favorece mucho a la lectura. Se concluyó que aunque la mayoría de la población ya la conoce es de vital importancia que el total de esta además de conocerla, la entiendan completamente y tomen en cuenta todos los nutrientes o sustancias que puedan llegar a perjudicar y así poder elegir los mejores productos para su alimentación y la de la familia y con ello tener un mejor estado nutricional.

Conocimiento, Etiquetado Nutricional, Elección de alimento

Citation: SOLÍS-LEAÑOS, Karla, GUTIÉRREZ-HERNÁNDEZ, Rosalinda, REYES-ESTRADA, Claudia Araceli and LAZALDE-RAMOS, Blanca Patricia. Parents' knowledge of nutritional labeling and its impact on food choices. Journal of Nursing Techniques and Health. 2023. 7-18:14-22.

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Introduction

The World Health Organization (WHO) recommends promoting a healthy diet for the control and prevention of chronic diseases, which can go hand in hand with the implementation of nutritional labeling on foods. There is evidence that people have little nutritional knowledge and this means that at the time of purchase they are not guaranteed to obtain products that have macro and micro nutrients necessary for a good diet (Millán, Núñez & Riveros, 2023).

The Food and Agriculture Organization of the United Nations (FAO) (2021) promotes the use of food labels as an effective way to protect the health of consumers in terms of food safety and nutrition (Martín-López & Fillol-Mazo, 2021). Food labeling provides information about the product and its contents, as well as instructions on how to handle, prepare and consume it safely. With the increase in global trade and the reduction of the direct relationship between food producers and consumers, there is a need for reliable food labels (García, 2021).

The importance of labeling food products lies in raising awareness of their high fat, sugar, sodium and low nutritional content, since most of them use a large amount of preservatives. According to studies, consuming processed foods is one of the primary factors for overweight and obesity. According to the Medical College of Mexico (2018), the consumption of ultra-processed foods in Mexico: has a high impact since the country in Latin America ranks first in the consumption of sugary drinks, snacks, snacks, cereals and sweets due to its high consumption. On average, each person consumes around 214 kilos of these products per year (Franco, 2020).

Inadequate use of the foods that are available and making the wrong decisions about how to consume them is due to sociocultural factors, such as ingrained customs, habitual lifestyles, and culinary or food traditions. In addition, economic, social, political and cultural conditions also influence the food problem. Another important factor is the lack of education on dietary issues to promote healthy habits and a healthy life.

Despite the lack of resources in many poor countries to access food in a safe and stable manner, it is of concern that many families, due to lack of information, spend their limited resources on food products that lack nutritional value. For example, bottled soft drinks, junk food and foods with intense flavors, which may satisfy the palate, do not provide the necessary nutrients and serve only to deceive the organism (Montaño, 2023).

Therefore, many countries have implemented different types of labeling, seeking to provide a complete, clear and very easy to understand tool for the entire population, without differentiating socioeconomic strata and seeking to impact in order to contribute in a favorable way to the health of the population in general. This work seeks to investigate the knowledge and understanding of nutritional labeling by parents, in addition to the use they make of it when choosing and buying their food.

Nutritional knowledge

Among the capacities that human beings possess is knowledge, since it allows them to understand the nature of their environment, the relationships between things and their qualities through reasoning. Knowledge can be acquired in different ways: one of them is "a priori"; this means that it is independent of experience and only reasoning is required to obtain it. On the other hand, knowledge can also be obtained "a posteriori", but in order to acquire it, experience is necessary (Tolentino-Mayo et al., 2018).

Nutritional knowledge provides a guideline for people to understand the different components of food, such as essential macro and micro nutrients, fats, carbohydrates, proteins, vitamins and minerals. It also provides an understanding of how these nutrients can affect health, well-being, physical and cognitive performance.

By incorporating nutritional knowledge when purchasing food products, one can select foods that meet individual family nutritional needs and thus have a healthy, complete and balanced diet.

ISSN: 2523-0352

Nutritional knowledge plays a fundamental role in the interpretation and application of nutritional information on food labels, which is why it is necessary to have a solid foundation of nutritional knowledge in order to make healthy choices and select products that fit individual and family needs.

On the other hand, ignorance of nutritional guidelines can lead to misinterpretation of labels, which can result in poor choices of shelf-stable products for human consumption. Thus, nutritional knowledge plays a crucial role in food choices. A study by Spiteri-Cornish & Moraes (2015) found that when people have poor nutritional knowledge, they tend to make unhealthy choices, despite having the motivation and opportunity to choose healthy products. Likewise, even in cases where consumers have high nutritional knowledge, label consultation is still maintained to make informed food choices. This provides further evidence of the importance of nutrition knowledge in promoting healthy eating habits.

Nutritional knowledge contributes to the modification of healthy habits but that does not mean that it changes eating habits, food in their labels alone should provide information to the consumer useful and easy to understand, without complications for the choice of food, nutritional knowledge has a significant impact on three fundamental stages: the understanding of the nutritional information present on the labels, the proper reading of such information and, finally, its practical application in daily life (Sanchez, 2018).

If a parent is nutritionally literate, he or she is more likely to consult, read and use the information on food labels to make purchasing decisions. In addition, the information summarized on labels can help consumers understand and compare the nutritional differences between various products. According to a study by Savoi et al. (2013), it was found that between 39% and 49% of the participants stated that front labels had changed their perception of a healthy diet.

Therefore, the nutrition label can favor the mother or father of the family, even educate them to improve their knowledge and understanding, it is also mentioned that there must be understanding of the information that is being read on the labels, because this will allow when selecting a food to already have the knowledge based on the contribution that this will have to the body and will result in an individual and family benefit (Sanchez, 2018).

Food choices are influenced by several factors that may vary depending on the stage of life of a person and also of an individual or group of people. Therefore, there is no single intervention that guarantees success in all population groups to modify this behavior, it is necessary to carry out different interventions aimed at different population groups, considering the many factors that influence their decisions when choosing food (Jáuregui et al., 2020).

Nutritional labelling

The nutrition label can be considered as an important tool to help mothers and fathers to make conscious and comprehensive decisions about their food plan, in order to improve the choice of food for consumption and thus have better quality of life. In recent times people are interested in knowing what they consume and that allows that at the time of choosing products of all kinds the label is consulted, and in the case of food is greater concern to see the nutritional contribution, also in this choice are considered those foods that do not involve favoring the development or increase the prevalence of chronic degenerative diseases such as diabetes mellitus and systemic hypertension, being the main risk factor the presence of overweight and obesity from an early age (Martínez-Ramos, 2018).

Nutrition labeling refers to the information provided to the consumer on the nutritional properties of a food product, which can be found on food and beverage containers or packaging. Nutritional labeling consists of three essential components that must be identified:

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A) **Table of nutritional information**: This section indicates the energy value and nutrients provided by the food per serving, specifying the amounts of proteins, fats, carbohydrates, fiber, sugars, vitamins and minerals present in the product, using the international system of equivalents, and can be shown in grams, milligrams and/or per piece (see image 1), this is very useful for those people who have allergies, intolerance or dietary restrictions; B) Front labeling: is a system designed to promote a better healthy choice in industrialized foods, with the aim of improving the health of the population facing increasing problems of overweight and obesity, and C) List of ingredients: this section shows the list of ingredients contained in the product, in descending order according to their quantity, also a distinction is made between total and added sugars so that the parent can identify the amount of sugars that have been added by the manufacturer, which are those that have health risks (Martinez-Ramos, 2018).

Información nutricional
Tamaño de la porción 1/4 de taza (113 g)
Porciones por envase 8

Cantidad por porción	
Calorías 100	Calorías de las grasas 20
	% de valor diario *
Grasa total 2g	**3%**
Grasas saturadas 1.5g	**7%**
Grasas *trans* 0g	
Colesterol 10mg	**3%**
Sodio 460mg	**19%**
Total de carbohidratos 4g	**1%**
Fibra 0g	**0%**
Azúcares 4g	
Proteína 16g	
Vitamina A 0% •	Vitamina C 0%
Calcio 8% •	Hierro 0%

*Los porcentajes de valores diarios se basan en una dieta de 2.000 calorías

Image 1 Nutritional table of foods
Source: Bialab, 2023.

In Mexico as of 2014, guidelines were implemented requiring food and non-alcoholic beverage products to include certain information on the front of the packaging. These guidelines also established the creation of a manual containing reference values for nutrients and energy. The objective was to provide clear and transparent information on the nutritional content and energy intake of prepackaged foods and beverages to the consumer.

The modification to the labeling came into force in 2015, establishing that the front-of-package labeling of industrialized foods and beverages (EFABI) is based on the daily dietary guidelines (GDA), since then, this type of labeling is in use (Tolentino-Mayo et al., 2018).

Front-of-pack labeling of industrialized foods and beverages (EFABI) is regulated by Mexican Official Standard-051. Effective until October 2020. The labeling information in terms of GDAs is presented on the front of industrialized food products and the information it contains in terms of nutrients is: saturated fat, other fats, total sugars, sodium and energy.

The system used for this has been the subject of many observations since its design, since it is based on intake percentages that are calculated based on a diet of 2,000 calories for a healthy adult; however, these percentages are exaggerated for populations with lower energy requirements, as in the case of children. Furthermore, this system establishes a fixed limit of 90 grams of sugar, despite the fact that the WHO recommends consuming less than 10% of total calories in the form of sugars, which is equivalent to approximately 50 grams for an adult. This system has proven to be difficult to understand, as it requires people to have knowledge of nutrition and certain mathematical skills. Several investigations have been conducted to determine the usefulness of the GDA label, but very few of them have evaluated its comprehensibility in an objective manner. However, objective studies show that a smaller proportion of people understand this information, which may be explained by the ability to understand such information and assign a value to it in relation to other necessary elements, such as knowledge (Tolentino-Mayo et al., 2021).

New labeling in Mexico

As a result of the obesity epidemic, new public policies have emerged that aim to improve the population's diet through the use of food nutrition labeling strategies. The Front-of-Food Labeling System (FFLS) has been identified as a relevant intervention to ensure the promotion of healthier diets. This strategy has proven to be effective in informing consumers to make healthier choices.

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In 2017, the Mexican Ministry of Health requested the National Institute of Public Health to form a trained staff or group of experts in food and beverage labeling, who issued a series of recommendations that resulted in the new nutrition warning labeling (Kaufer-Horwitz et al., 2018).

The implementation of this labeling on food and beverages began in October 2020 as a result of the modification to the Mexican Official Standard 051-SCFI/SSA1-2010 on labeling. This modification was published in the Official Journal of the Federation in March 2020. This standard establishes the requirements for a system of front-of-package warning labeling for prepackaged foods and non-alcoholic beverages, with the objective of informing consumers about nutrient ingredients that represent a health risk, such as sugars, saturated and trans fats, sodium and calories.

The EAN was developed as a tool to provide quick and easily understandable visual insights that enable consumers to identify unhealthy food products and, therefore, help them make better food choices.

The EAN takes reference values based on the amount of energy (calories) and the four so-called critical nutrients (CN) (free sugars, saturated fat, trans fat and sodium) provided by 100 g or 100 ml of the product, as these nutrients are considered risk factors associated with Chronic Non-Communicable Diseases (NCDs) (see Figure 16).

Figure 2 Warning labeling and characters aimed at children's audiences
Source: Public Health Institute, 2021

The EAN includes a warning stamp for each excess NC, however, foods packaged with a small display surface (packaging) do not include an individual stamp for each critical nutrient in excess, they only include an individual stamp with the legend "n stamps" (n = number of excess NCs) (see figure 2).

Figure 3 Warning labeling and characters aimed at children's audiences
Source: Public Health Institute, 2021.

Products for children that have warning seals or sweetener legends are prohibited from having persuasive elements on their packaging, such as: children's characters, brand mascots, drawings, celebrities, athletes or other interactive elements.

With the new labeling, the list of ingredients is maintained, but a modification is introduced in the way the different types of sugar are presented. These are now grouped under the label "added sugars", followed by a list in parentheses specifying the names of the added sugars present in the product. This change is intended to give the parent the ability to more clearly identify the sources of unknown sugars in the product. This information can be found in the new table or nutrition declaration.

Methodology to be Developed

A descriptive, observational, cross-sectional study was conducted in a community called Tabasco in the city of Zacatecas, Zacatecas, a simple random probability sampling was used, 36 parents between 21 and 70 years of age, sex indistinct, living in the community and who signed informed consent to participate in the study were included.

An instrument was applied which was distributed via WhatsApp to the participants in Google Forms formats, this due to the social distancing that was being experienced. An informed consent form was included at the beginning of the form so that people could express their interest in participating in this study.

Ethical considerations

The present study complies with the considerations of the Nuremberg Code of 1947, which speaks of the voluntary consent of the subject, the person involved has the legal capacity to give consent,

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The results obtained were carried out with the purpose of being fruitful for the good of society. The study will avoid unnecessary physical or mental harm. Also adhering to the universal declaration on bioethics and human rights, article 3 of human dignity and human rights, where human dignity, human rights and fundamental freedoms will be fully respected. According to the General Health Law on Health Research of the United Mexican States, this study is considered to be of no risk.

Results and Discussion

Labeling, as already mentioned, is a fundamental tool for people to make conscious decisions about the food they are going to consume and what they need to buy. Over time, changes have been made worldwide in food labeling systems, in order to make them more understandable (Kobayashi, Tolentino & Torres, 2022).

This labeling seeks to facilitate the interpretation of nutritional information in order to have healthy eating habits, the concern is whether parents have the necessary knowledge to understand and make the best decisions when buying the food that will be put on the table of their children.

There are works that have been done in recent years and have left in evidence the significant gap in terms of knowledge that parents have about this new nutrition labeling (Reyes, Perales & Zamora, 2023), this is of concern because parents play a crucial role in the choice of foods that children consume, then they should be the ones who understand the importance that can provide them with the new labels, as this will allow them to buy healthy products (Reyes, Perales & Zamora, 2023), this is of concern because parents play a crucial role in the choice of foods that children consume, then they should be the ones who understand the importance that can provide them with the new labels, as this will allow them to buy healthy products (Reyes, Perales & Zamora, 2023).

The objective of this study was to determine the knowledge that mothers and fathers have about nutrition labeling and its impact on food choices. In this study, 36 responses were obtained from parents, of which 19 were men and 17 were women.

	Frequency	Percentage	Cumulative percentage
Female	17	47.2	47.2
Male	19	52.8	52.8
Total	36	100-0	100.0

Table 1 Respondents to the survey to obtain percentages by sex
Source: Own elaboration based on data collection.

The ages of the parents who participated were grouped into five ranges as shown in Table 2, it was found that the largest number of people who answered the form were from 21 to 30 years old, with a percentage of 33.33%, followed by ages 41-50 years old with 30.55%.

	Frequency	Percentage %	Cumulative percentage
Between 21 and 30 years old	12	33.33	33.33
Between 31 and 40 years old	8	22.22	55.55
Between 41 and 50 years old	11	30.55	86.1
Between 51 and 60 years old	4	11.1	97.2
Between 61 and 70 years of age	1	2.77	99.97
Total	36	100%	

Table 2 Respondents by age range
Source: Own elaboration based on data collection.

Of the people who filled out the survey, 5.55% mentioned that they did not attend school, 66.67% only finished elementary school, 19.45% finished high school, 2.77% had a technical career and only 5.55% had a bachelor's degree. It was considered as a requirement to answer the survey that they were parents, we sought to know if they had children under 18 years of age seeking to know if the knowledge of this labeling also influences the feeding of minors as mentioned in their work Serrano & Beltran (2020), they state that mothers exert a strong influence on the weight of their children and are concerned about the eating behaviors of these; and that parents also play a role in the imposition of child feeding practices.

In this study, 86.2% of parents have children under 18 years of age and only 13.8% do not, which may mean for this study that most parents have knowledge of the labeling that influences the feeding of children.

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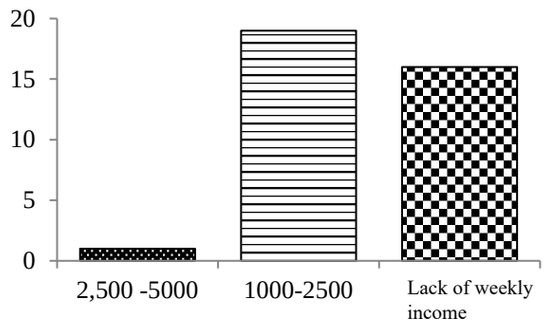
Another factor that can affect the choice of food leaving aside the knowledge is the price, 53% of respondents have a weekly income of between 1000 and 2500 which is considered a minimum wage in Mexico, 44% do not generate weekly income and the remaining 3% generate a weekly income that is between 2500 and 5000 pesos (Graphic 1).



Graphic 1 Household income
Source: Own elaboration based on data collection

They were also asked whether or not they know the nutritional information table or label, 97% said they knew the label and only 3% said they did not (see table 3).

	Frequency	Percentage	Cumulative percentage
If known	35	97	97
Do not know	1	3	3
Total	36	100	100

Table 3 Respondents to the survey to draw percentages by gender
Source: Own elaboration based on data collection.

In Mexico, labelling for pre-packaged food and non-alcoholic beverages of national or foreign manufacture, which are marketed in the country, is mandatory according to NOM-051-SCFI/SSA1-2, which is responsible for establishing the commercial and health information that these products must contain. Based on this, they were asked whether the population is indeed aware that packaged foods must contain a nutritional table, 89% said that they are aware of this and 11% are totally unaware of this information.

When asked if the nutritional table is read when purchasing food, 81% said they do read it and 19% do not, this coincides with the data of the Ministry of Health and Social Development of the Nation within the 2nd National Survey on Nutrition and Health (2019), where it is mentioned that only a third of the population reads nutritional labels and also mentions that of that percentage only half of them manage to understand the information.

Also of the 81%, 69% mentioned that the information contained is of valuable importance and does influence in such a way that it is taken into account during their food choices, however, 31% of the interviewed population, although they read the label, do not take it into account when choosing the food that will be taken home for consumption.

Of the 69% mentioned above, when asked if they agree on the importance of reading and understanding the nutrition facts table in order to choose an appropriate, healthy product, they responded that they totally agree.

As for the people who said they read the nutritional table, they were asked which are the foods or groups of foods on which they most concentrate their reading. Table 4 shows the groups they were provided with, among which were: meats, legumes, dairy products, cereals, etc.

	Frequency	Percentage
All	6	16.67
Some	0	0
Meat	0	0
Legumes	0	0
Bread	0	0
Dairy	5	13.89
Cereals	3	8.33
Preparations	0	0
Delicatessen	0	0
Other	6	16.67

Table 4 Foods where the nutritional table is most often read
Source: Own elaboration based on data collection.

It was found that 30% of these people reported reading the nutritional table of all foods, another 30% said they read it mostly in other foods not found within these options, 25% observed the table especially in dairy products, and 15% in the cereals group.

ISSN: 2523-0352

We also asked about the current design of the nutritional label, if they consider that this favours the consumer's reading, 60% responded that the design of nutritional information is favourable, but 40% responded that this design is not favourable to them. When obtaining this information, three options were considered for the 40% who responded negatively, they were given three options to favour the reading of the labelling, one of them was to increase the size, another was the format and the last one was the location. The responses were that the best option would be to change the size, followed by the format.

Acknowledgement

Un agradecimiento especial a la población de padres de familia que participaron en el trabajo.

Funding

The following work was not funded.

Conclusions

In this study, parents consider that reading the nutrition label does have an influence on their food choices; they consider the information provided to be of great importance.

Despite the fact that the majority of the population already knows the nutrition facts label, not all of them read it completely, most of them only look at some parts of the table, their main concern being the consumption of fats, followed by calories and carbohydrates.

This is why it is still a priority for the whole population to read and understand it completely, which will help them to make better decisions when choosing food, to be able to opt for a better product and thus achieve a better diet and therefore a better nutritional status for both parents and their children.

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ISSN: 2523-0352