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SPECIAL EDITION

USING INTERVENTION MAPPING PROTOCOL TO DESIGN EDUCATIONAL MATERIAL ON NUTRITION

DISEÑO DE MATERIAL EDUCATIVO EN ALIMENTACIÓN USANDO INTERVENTION MAPPING

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SPECIAL EDITION

ABSTRACT

Introduction: Evidence-based and culturally acceptable educational materials have proven to be an effective tool in promoting healthy eating. **Objective:** To design a printed educational material on healthy eating using Intervention Mapping for a Lifestyle Clinic. **Methods:** The Intervention Mapping methodology was used with the steps 1) needs assessment, 2) Matrices of objectives, 3) Theoretical methods and 4) Design. **Results:** The PRECEDE Logic Model was built, the matrix of change objectives based on the determinants of knowledge, identification, availability and support, and information processing was used as a theoretical method. A 22-page magazine with content, images, text, and writing was obtained based on the Intervention Mapping steps. **Conclusions:** The Intervention Mapping process provided evidence-based and participatory inputs for the design of the educational material of the Lifestyle Clinic under study.

Keywords: Health promotion, Public health, Education. (Source: MeSH NLM)

RESUMEN

Introducción: Los materiales educativos basados en evidencia y culturalmente aceptables han demostrado ser una herramienta efectiva en el fomento de la alimentación saludable. **Objetivo:** Diseñar un material educativo impreso en alimentación saludable usando Intervention Mapping para una Clínica del Estilo de Vida. **Métodos:** Se utilizó la metodología de Intervention Mapping con los pasos 1) evaluación de necesidades, 2) Matrices de objetivos, 3) Métodos teóricos y 4) Diseño. **Resultados: S**e construyó el Modelo Lógico PRECEDE, la matriz de objetivos de cambio basado en los determinantes conocimiento, identificación, disponibilidad y apoyo y se utilizó el procesamiento de la información como método teórico. Se obtuvo una revista de 22 páginas con contenido, imágenes, texto y redacción basado en los pasos de Intervention Mapping. **Conclusiones:** El proceso de Intervention Mapping proporcionó insumos basados en evidencia y participativos para el diseño del material educativo de la Clínica del Estilo de Vida en estudio.

Palabras clave: Promoción de la Salud; Salud Pública; Educación. (Fuente: DeCS BIREME)

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INTRODUCTION

The lifestyles of the Mexican population[1] are characterized by a diet high in saturated fats, added sugars, salt, meat, and low physical activity, which are factors related to the high prevalence of morbidity and mortality, and micronutrient deficiencies[2-3]. The Lifestyle Clinic (CEV)[4] is an institution in northern Mexico that has: behavior change, lifestyles, and healthy plant-based eating programs, that seeks to systematize its educational materials since these have proven to be an effective tool in promoting healthy eating when they are evidence-based and culturally acceptable [5-7].

In this sense, the health promotion and education methodologies propose an evidence-based process to follow in the construction of materials and interventions. Intervention Mapping (IM) is a systematic process that guides the planning and practice of health promotion and education (PS) [8]. Promote access to information and develop abilities and skills that allow people to have control over their health[9] , It is a principle raised from PS in which healthy eating is included. Therefore, the objective of this research was to design printed educational material on healthy eating using Intervention Mapping for a Lifestyle Clinic.

METHODS

Design and study area

The present study is of a methodological type in which IM was used for the design process of the educational material from January to August 2021, taking into account four of the six steps that IM contains[10]. The scientific rigor and the quality of the content of the materials or tools allow greater effectiveness in health education. In this sense, a methodological process such as the IM leads the construction of materials for health promotion and education purposes. A methodological process is the fulfillment of minimum standards for the fulfillment of an objective[11].

Process

Step 1: Needs assessment.

As a first step, a multidisciplinary work team is established to evaluate the central health problem based on the scientific literature, review of patterns and dietary quality of the people who come to the CEV documented in the dietary records, and based on this the PRECEDE Logical Model is generated, which poses the main health problem of the population, the consequences on the quality of life of the people who present the problem, as well as the behavioral and environmental factors that precede it and its determinants.

Step 2: Matrices of objectives.

From the construction of the first step, the main objective of the study is defined and a matrix is drawn up that identifies determinants of behavior and the environment to establish objectives for change.

Step 3: Theoretical methods.

Based on the establishment of the change objectives, the ideal method is selected that allows modifying the determinants of behavior and the environment previously identified in step two.

Step 4: Design.

With this information, the work team designs and carries out comprehension, attractiveness, and motivation tests on the structure, content, themes, messages, images, and colors of the educational material it builds.

Ethical aspects

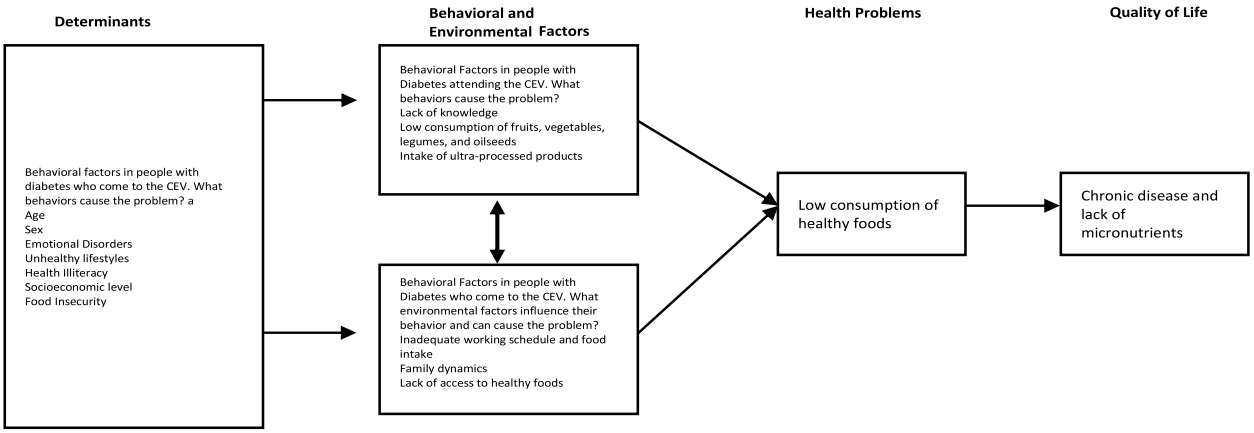
The research protocol was approved by the Montemorelos University Ethics and Research Committee with reference 2021-012-CI72.

RESULTS

Step 1: Needs assessment

A multidisciplinary work team was formed, made up of two nutritionists, a physician, a diabetes specialist, a physiotherapist, a health work specialist, and a graphic designer. 57% of the team were women (N=4), the average age was 32 years and all the members are related to actions in Lifestyle Medicine. To define the central health problem, the dietary records of the people who attended the CEV during the last year were analyzed and the lack of healthy eating was identified.

The team reviewed the scientific literature on the problem and built the PRECEDE Logic Model, which establishes the impact on quality of life derived from the problem as well as the analysis of behavioral and environmental factors and their respective determinants that precede the lack of a healthy diet (Figure 1).



Elaborated by us based on a review of scientific literature.

Figure 1. PRECEDE. Logic Model.

Step 2: Matrices of objectives.

The main objective of the study was to design printed educational material on healthy eating for people who attend the programs offered at the CEV. For this, actions were identified to achieve the objective, determinants of behavior, and environment, according to Table 1.

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Table 1. Matrix of Action objectives, determinants, and changes in objectives.

Objetivos de acción	Determinantes del comportamiento		Determinantes del ambiente	
	Conocimiento	Entendimiento e identificación	Disponibilidad	Apoyo
1.El equipo de trabajo realiza una revisión bibliográfica de consumo de fibra	El equipo conoce la recomendación en gramos del consumo de fibra y los grupos de alimentos que la contienen	El equipo llega a comprender la relevancia del consumo de fibra como parte del tratamiento dietético a través de alimentos culturalmente aceptables en las personas que acuden a la CEV	El equipo cuenta con acceso a bases de datos científicas para hacer la revisión bibliográfica	El equipo de trabajo se apoya durante la revisión bibliográfica
2.El equipo de trabajo delimita y ordena los temas	El equipo conoce el orden y el contenido de cada tema del material	El equipo entiende que los temas y el orden de estos son relevantes para las personas que acuden a la CEV	El equipo cuanta con disponibilidad de herramientas para realizar la delimitación y ordenación de temas	El equipo se apoya en la delimitación y ordenación de temas para el material
3.El equipo de trabajo diseña el material impreso	El equipo conoce el proceso de diseño de material	El equipo diseña el material basado en una estructura y haciendo uso de imágenes, lenguaje y colorimetría con los que la población con DM que acude a la CEV pueda identificarse	El equipo tiene disponibilidad de personal de diseño y herramientas tecnológicas necesarias para el fin	El equipo se apoya con retroalimentación durante el diseño del material

Step 2: Matrices of objectives.
The main objective of the study was to design printed educational material on healthy eating for people who attend the programs offered at the CEV. For this, actions were identified to achieve the objective, determinants of behavior, and environment, according to Table 1.

Step 3: Theoretical methods.
Information Processing Theory was selected as the theoretical method to address the determinants of step two. This theory is characterized by using a pattern as a stimulus in understanding the subject. It can be applied in printed educational materials through images or messages, since these support the memorization and processing of information[12-13].

Step 4: Design.
A printed magazine-type educational material was prepared, which is entitled "Healthy Eating Education Magazine", which has a cover, CEV logo, index, prologue, and content that includes nine topics: 1) Fiber, 2) How to increase fiber intake? 3) Fruits, 4) Glycemic index and load, 5) Vegetables, 6) Legumes, 7) Cereals and tubers, 8) Seeds and fats, and 9) Foods without fiber. Images of known foods among the Mexican population were attached to each theme, as well as values of some nutrients.

It was written in Spanish and colorimetry was used according to the proposed objective. The digital design was in charge of the graphic designer who used the Adobe InDesign program cc version 2018, to generate the first version. This proposal had comments from the work team, which were addressed and a second version was produced. The latter went through a process of evaluation of the theme, comprehension, colors and images, font type and size, as well as the motivation to action among the members of the working group (Table 2). Finally, the magazine was printed on glossy Couche paper with a size of 8x10 inches (Figure 2).

Elaborated by us

Figure 2. Design of educational material.

Table 2. Evaluation Scores

	Theme of the magazine	Comprehension	Colors and images	Font type and size	Motivation to action
1	5	5	5	5	4
2	5	4	4	5	5
3	5	4	5	4	5
4	5	5	5	4	5
5	5	5	5	5	5
6	5	5	5	5	5
7	5	5	5	5	5
Average	5	4.7	4.9	4.7	4.9

DISCUSSION

This research was developed under the IM methodology, which is an evidence-based process that integrates participation, the ecological model, behavioral theories, and systemic thinking [14], which allowed the design of printed educational material for healthy alimentation. Using this process responds to the recommendations to develop PS [15] since those educational materials that are based on theory and evidence have been reported to have a greater probability of effectiveness [16]. Although IM consists of six steps, in this research only up to step four is presented. This process has been used for different health topics including the development of materials for health promotion and education programs on food and nutrition[17-19]. Even though there is little evidence of the use of IM in Mexico [20], the development of actions in PS requires methodological processes that provide scientific quality, evaluation, and attention to changes in behavior and the environment necessary to favor health and reduce inequities[21].

CONCLUSIONS

The design of printed educational material was developed through the Intervention Mapping process, which provided evidence-based inputs to be used in actions aimed at health promotion and education of the Lifestyle Clinic under study.

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