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Assessing the Validity of an Informative E-Booklet: A Structured Teaching Programme to Promote Preventive measures for Non-specific Low Back Pain among Undergraduate College Students

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ABSTRACT: The prevalence of non-specific low back pain among college students is a common cause for concern in terms of their health. The aim is to develop and validate the content of an e-booklet that serve as a structured teaching program to promote preventative measures for non-specific low back pain among the population. The primary purpose of the research was to validate the e-booklet by evaluating the quality of its content. Specifically, the researchers aim to make sure that the material that was presented was accurate, clear, understandable, and comprehensive. The methodology consisted of a two-step process. Before beginning to educate undergraduate college students about low back pain, a comprehensive literature search was performed. It included significant information on the prevention and treatment of low back pain. Firstly, it served as the foundation for the education of undergraduate college students. Second, the content included in the e-booklet was assessed for accuracy using the Delphi technique. Hoffman's suggestions were taken into consideration while the e-booklet was being developed. The total content validity of the e-booklet was determined to be 1.0 on the Content Validity Index (CVI), which indicates a high level of content validity. Additionally, each individual section inside the e-booklet achieved a CVI of 1.0, indicating a high level of relevance, correctness, clarity, and completeness throughout the entirety of the content. Expert input from the validation procedure was quite helpful, and the final e-booklet was substantially improved as a result. The results of the validation showed that the e-booklet had a high level of content validity in each of the following six categories: time and objective, content, writing language, illustration, layout, and general features. During the process of validating the e-booklet in a single step, all of the items in the booklet achieved acceptable levels, which were defined as being greater than 0.80. Challenges of the study includes potential limitations in participant recruitment and retention. Despite these challenges, the study contributes significantly to the field by providing a structured teaching program in the form of an informative e-booklet. This innovative approach addresses a gap in existing educational strategies for preventing non-specific low back pain among the target population.

Keywords: Booklet, content Validity, CVI score, Low Back Pain, College Students.

INTRODUCTION

Education is a critical component of one's life because it plays a significant role in the formation of one's personality and behaviour, as well as in the enhancement of one's health and lifestyle choices (Shorthouse *et al*., 2016). Education extends beyond the world of academic knowledge into the field of healthcare, where it plays an essential role in the creation of new ideas and procedures for the prevention and treatment of disorders (Mcdonough *et al*., 2010). When individuals are educated about health issues, it benefits not only the general population but also motivates healthcare professionals to seek out and generate knowledge about new breakthroughs in their field (Mcdonough *et al*., 2010; Treweek *et al*., 2002). It is necessary to communicate amongst institutions, professionals, and people all over the world in order to generate new possible ways(Burton *et al*., 2006); the ideal way to do this is by using printed instructional resources such as posters, books, booklets, handouts, and/or pamphlets, etc (Coudeyre *et al*., 2007). They provide individuals with guidelines and advice that allow them to make informed decisions about their health and lifestyle choices (Coudeyre *et al*., 2007). These types of tools are used by healthcare professionals to teach people about various preventive measures, such as changes to their lifestyle, diet, and exercise routines (Aniel *et al.*, 1998; Awren *et al*., 1997).

On the basis of the information provided, one determines what to do and what not to do; furthermore, they help in becoming a channel through which specialists teach citizens (Ammendolia *et al*., 2009). However, there is a problem with the scientific accuracy of the information written. As a result, the

construction of booklet is required to adhere to certain principles.

In order to commence, it is imperative that the knowledge encompassed within these resources have a robust scientific underpinning, necessitating its derivation from dependable sources and research that is substantiated by empirical data (Dupeyron *et al*., 2011; Mcdonough *et al.*, 2010). This ensures the accuracy and currency of the provided information, along with the prevailing best practises in the healthcare domain. Additionally, it is imperative to adopt a meta-educational methodology whereby the content is tailored to align with the cognitive abilities and knowledge level of the intended audience. The development of materials is designed in a manner that effectively engages readers and sustains their interest throughout the whole reading process (Coudeyre *et al*., 2007; Tavafian *et al*., 2007).

Furthermore, the ability to effectively engage with and understand the content provided in a healthcare education curriculum is a fundamental aspect. In order to facilitate comprehension for individuals with limited medical knowledge, it is imperative that the language employed in these documents be straightforward, unambiguous, and devoid of intricate terminology.

The booklet ought to have an appealing design, be written in a language that is easy to read, and make use of common vocabulary so that the message can be conveyed to the intended audience with relative simplicity. The content was initially validated by experts who have experience in the field.

In the field of physiotherapy, booklets are frequently used to educate patients about the exercises that are prescribed to them based on their ailments (Tavafian *et al*., 2007). These booklets typically include information about how to avoid developing a disease or illness in the first place as well as treatment options. People will experience low back discomfort at some point in their lives, and this is one of the most significant challenges they will face (Singh *et al.*, 2019). Prior to the past few decades, low back pain was considered a sort of age-related sickness, and only a very small number of young people suffered from it. However, as a result of changes in lifestyle, people suffering from low back pain can now be observed in all age groups, including adolescents and college students (Tavafian *et al*., 2007).

In recent decades, there has been a notable increase in the prevalence of low back pain, which has emerged as a significant issue impacting individuals across various age groups (Ehrmann Feldman *et al*., 2001a). Long seen as a condition mostly associated with ageing, low back pain has lately become prevalent among teens and college students as a result of lifestyle modifications (Ehrmann Feldman *et al*., 2001). The increasing popularity of computer usage has emerged as a significant contributing factor (Kulkarni & Borkar 2022).

The primary factor contributing to back pain among computer users has been found to be the presence of an abnormal sitting posture during computer usage (Wickstrom & Pentti 1998). In today's tech-driven society, when computers have become a necessary component of daily life, it is imperative to spread awareness about low back pain among college students. Many students are not aware of the possible negative repercussions of this technological lifestyle (Albaladejo *et al.*, 2010; Selkowitz *et al.*, 2006). Thus, college students must be educated about low back discomfort and optimal computer posture to prevent and manage it, according to researchers (Coudeyre *et al.*, 2007). As a result, the purpose of this study was to produce and validate the content of a booklet (a structured instruction programme in printed form) that would be given to undergraduate college students who were experiencing low back pain (Shorthouse *et al*., 2016).

METHOD

In this study, there were two steps that were followed. The first step was to search and collect the literature mentioned for the prevention and treatment of low back pain for the purpose of educating. The second step was to validate the content of the E-booklet that has been designed by experts using the Delphi method. Additionally, while developing the booklet, all of the recommendations given by Hoffman., 2014 were considered as a base.

Design and Creation of A Booklet. The content was prepared in accordance with the suggestions that were mentioned in the literature for the preparation of educational material (Mccarthy *et al*., 1987; Yaghmalef & Ct 2003). This step was broken up into four distinct stages:

1) A review of the relevant literature, with the goal of developing a scientific foundation for the content: On the basis of selection criteria spanning 10 years, articles were looked for within the database. The search was conducted.

2) Content organisation: the content was organised in order to make the content simple and effective for one to understand in the following by describing them in the below mention points: definition, incidence/epidemiology, anatomy and physiology of lumbar spine, risk factors, causes, symptoms, warning signs, diagnostic test or tool used for diagnosis of low back pain and treatment, and prevention strategies.

3) The development of the booklet's content, illustrations, and layout: The booklet's contents were developed in Microsoft Word, and the illustrations were created with the idea that anyone would be able to easily grasp the concept. Particular attention was paid to the essential information that was required for the prevention and management of low back pain, and this information was illustrated with a photograph and a description that was brief and to the point.

Participants. According to the protocol that was described by Polit *et al.*, 2006, 6 Indian researchers were invited to take part in the current study. These researchers had established scientific track records in the fields of physiotherapy, pharmacy, English language, and medicine, and they were actively treating patients who suffered from low back pain. In addition,

they had in-depth knowledge regarding low back pain. The researchers who took part in the study had experience from five to twenty-five years, and of the 6 researchers who volunteered to take part, 5 held master's degrees and one held a doctorate in the relevant field of study. According to the experts, they had good knowledge of low back pain and the treatment options available for it. Within the scope of this investigation, just a single step of content validation was carried out, and a total of six specialists provided responses within the allotted time frame. In this particular research project, in addition to the medical practitioner (physiotherapist, physician), a pharmacist and an expert in the English language had also participated in the booklet validation process.

Procedures. A single phase of content validation was done, during which the initial and amended versions of the instrument were subjected to content validity by a committee of six experts with representation and recognition in the field of interest of this study. This phase of content validation was performed as part of the single phase of content validation. As a result, an English-language content validation booklet was established, which evaluated the content organisation, language that is straightforward and easy to grasp, and how relevant the language is to the subject matter. The appropriateness and understandability of each item were improved. Following the completion of the telephonic contact that was used to obtain each expert's consent to take part in the study, a booklet was electronically delivered to each expert's personal email address.

Statistical Analysis. A Content Validity Index (CVI) was utilised for the purpose of doing statistical research on the instrument's content validity. For the purpose of computing the CVI, each item was assigned a ranking on a scale with just two possible outcomes: agree (1), disagree (0), or remain neutral (0). After assigning a ranking to each item, the CVI was computed by dividing the number of experts who assigned a score of 3 or 4 by the total number of experts. The first step of content validation included the participation of six subject matter experts, and the permissible range for the CVI value of each question was from 1.00 to 0.80. During the second phase, the items that were taken into consideration for acceptance were those that had a CVI that fell anywhere between 1.00 and 0.80.

RESULT

The booklet contained a total of 19 items, which were organised into six distinct categories: "time and objective" (2 items), "content" (5 items), "writing language" (2 items), "illustration" (2 items), "layout" (5 items), and "general feature" (3 items).

In the first category, there were two questions, both showing a respectable CVI score of 1. Similarly, in the second category, which comprised five questions (Q3–Q7), each question also received a CVI score of 1, indicating satisfactory results. The "writing language" and "illustration" categories each consisted of two questions (Q8-Q9) and (Q10-Q11), respectively, and all of these questions obtained a CVI score of 1. Moving on to the "layout" category, there were five questions (Q12–Q16). In the final category, "general feature," there were only three questions (Q17–Q19), with each question receiving a CVI score of 1.

DISCUSSION

According to content validity, validity is connected to the consistency with which score interpretations of an instrument were made and reflects the degree to which these scores measure what they assert to measure (Yaghmalef & Ct 2003). In the current study, only a single round of content validation was undertaken for the complete collection of questions in order to reach a conclusion that was accepted by the specialists. According to this, when there is not complete consensus regarding an issue, that item needs to be reevaluated until there is general agreement over it (Lawshe, 1975). However, there are some things that, no matter how many times they are revised, will never meet these criteria, and, as a result, they should not be included in the document (Ghazali *et al*., 2020). However, in this research, a single-phase validation approach was used, and all six domains (time and objective, content, writing language, illustration, layout, and general feature) had 100% of their items meet acceptable levels (above 0.80). A pilot study will be carried out to determine the booklet's reliability. The findings of this pilot study will be used as a basis for future assessments.

CONCLUSIONS

The e-booklet has effectively created and verified as a comprehensive teaching program designed for non-specific low back pain in college students. The e-booklet exhibited a notable degree of precision, lucidity, and comprehensiveness, as seen by its content validity, which was verified across multiple areas.

FUTURE SCOPE

In the future, potential areas of investigation may involve evaluating the influence of e-booklets on students' knowledge and actions pertaining to the prevention of low back pain. Additionally, the validation approach employed in this study could serve as a model for developing efficacious instructional materials in various other health-related fields.

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