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CONTENT VALIDITY OF A QUESTIONNAIRE TO ASSESS THE KNOWLEDGE OF CERVICAL SPONDYLOSIS OF COLLEGE STUDENTS

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ABSTRACT

Background-Cervical Spondylosis is a degenerative condition of the cervical spine. It is often associated with pain in the neck, difficulty in movements and sometimes radiating pain, tingling and numbness in the upper extremity. Cervical spondylosis is a common condition that is estimated to account for 2% of all hospital admission. In Karnataka incidence of cervical spondylosis is 7.25 cases per 1000 population. Bangalore prevalence of cervical spondylosis is 23.25 per 10000 populations and in malwa region of Punjab was 47 percent as per study done by Budhiraja etal in 2020. The main reasons for the neck pain are prolong computer use and unhealthy living habits. It is essential to raise public awareness about the risk of cervical spondylosis, to prevent next generation that, is today's children from entering the industry with already.

Therefore purpose of this study was to developed and validated a questionnaire to assess the knowledge regarding cervical spondylosis among college students.

Methods: This study comprises two phases, instrumental design and judgmental evidence. A total panel of 12 experts from the field was used to validate the questionnaire through quantitative (content validity) methods by using Content validity index (CVI). A Preliminary versions of this tool showed moderate content validity of individual items those having less score (I-CVI<.80)

was sent for second round for validations. The tool consists of 30 questions based on knowledge about Anatomy and physiology; General information; Risk factor, causes, signs and symptoms and Diagnosis, management, prevention and Complication.

Result: The final results gave a product of a structured questionnaire of 30 items and a content validity accepted with a CVI score of above .80 in all the items.

Conclusion: Using an iterative approach, the development and validation of the questionnaire demonstrated high item – content validity for assessing the knowledge regarding cervical spondylosis among college students.

Keywords- Content Validity, CVI score, Cervical Spondylosis, Structured Questionnaire and knowledge

INTRODUCTION

In today's era of modernization and technology has made the life easier and also increases the number of musculoskeletal diseases Musculoskeletal Disorders (MSD) involves injuries in the structure of musculoskeletal system like muscles, tendons, ligaments, nerves, discs, blood vessels, etc. Among all the body parts, Neck region is the major concern because of stress or overuse of neck structure while using electronic devices like mobile phones, notepad and laptops for doing official work or leisure activities for a prolonged period especially in undergraduate students and increase the risk of developing cervical spondylosis.

In order to prevent the cervical spondylosis, knowledge how to prevent them is necessary therefore a Questionnaire to Deals with knowledge is design which consist of 30 questions. It includes questionnaire regarding anatomy and physiology of cervical vertebrae; general information of cervical spondylosis; Risk factor, causes, symptoms and diagnosis of cervical spondylosis; Management, prevention and complication of cervical spondylosis.

In present questionnaire very item were included by literature search and then opinion of the expert of the field was sought [1]. And each item were evaluated and validated by a panel of experts [2, 3]. A content validation certifies whether an instrument measures what's intended and verifies whether the items properly reflect the content domain of interest and whether the size dimensions are according to each proposed item and fulfil the precise objectives index [2, 4]. Content validity aspects include the appropriateness, clarity and

comprehensiveness of things, which are classified by an evaluation of the instrument items by a gaggle of experts with previous experience or currently recognized competence within the field of study, namely judges or experts [2, 5-7]. Therefore, this study aimed to validate the content of a developed instrument to assess the knowledge of the subject about the knowledge of cervical spondylosis.

METHODS

The stages for the development and validation of an instrument encompass four distinct phases: planning, construction, quantitative analysis, and validation [2]. The instrument planning and construction phases, described by Natalio et al [1], consisted of an extensive literature review, expert opinion . Content validation is described in the present study.

Participants

According to the protocol described by Polit et al. [6], 12 Indian researchers, with proven scientific track records in the field of physiotherapy dealing with the patient of cervical spondylosis and having the depth knowledge about the cervical spondylosis, were invited to participate in the present study. The length of experience of the participants ranged from 05 to 20 years, and among the 12 researchers, who agreed to participate, 11 had Master's degrees and 1 had Doctoral degrees in the area of study. Expert reported that they have the excellent or good knowledge of cervical spondylosis and its management. In the first phase of content validation, 6 experts responded within a specified period. In the second phases, 6 specialists participated. The experts were from the different region of the country and all were dealing with cervical spondylosis patients in their hospital, clinic and physiotherapy OPD of their respective organizations.

Procedures

Two phases of content validation were performed, in which the initial and modified versions of the instrument were subjected to content validity by a committee of 6 experts with representation and recognition in the area of interest of this study. Thus, a content validation questionnaire was developed in English, which evaluated the content organization, language is simple and easy understanding , relevant to the topic ,and Adequacy and clarity of each item developed. [5-7,10]. Questionnaire was mailed to the each expert on their email id respectively after taking consent from them for participating in the study through telephonic call.

Statistical analysis

The content validity of the developed instrument was statistically analyzed by a Content Validity Index (CVI). To calculate the CVI, each item was ranked on a two-point scale (1 =agree, 0= disagree and neutral is also considered =0) for each item, the CVI was calculated as the number of experts who provided a rank of 3 or 4, divided by the total number of experts. Six experts participated in the first phase of content validation, the acceptable CVI value for each item ranged from 1.00 to 0.80. In the second phase, the items considered as acceptable were those that had a CVI ranging from 1.00 to 0.80.

RESULTS

The first version of the instrument was developed with a total of 30 items divided into four domains: Anatomy and physiology (3 item), General information (3), Risk factors, causes, signs and symptoms (7), Diagnosis management, prevention and complication (17).

The first phase of content validation

In first domain, It consist of three question among them question no 2 and 3 shows unrespectable CVI score in adequacy and language clarity i.e. 0 .50 and .667 respectively and second domain, results were quite satisfactory ,it consist of three questions in which only one question shows less value of CVI score i.e. 0.66 in Adequacy and clarity whereas on the other hand in third domain only 3 questions out of seven has unrespectable CVI score , question no 11 and 13 in adequacy and clarity and question number 12 in language. At last in the fourth domain 7 questions out of 17 shows less CVI score, question 15 and 22 both in Adequacy and language; question number 20 and 27 in adequacy, language and content organization; question number 18 and 26 in language and content organization; question number 25 in adequacy and question number 29 in language only **(Table 1)**.

Table 1

S. No.	Question	Relevant to the topic of the study	Adequacy and clarity of contents	Content organization	Language is simple and easy understanding	Comments
1	how many vertebrae are there in cervical region	1	1	1	1	
2	Main function perform by the cervical vertebrae is:	1	0.50	.83	.83	Modified
3	Give a reason for cervical spine is highly prone to injury	1	.83	1	.667	Modified

4	Cervical spondylosis can be explained as :	1	.66	.83	.83	Modified
5	Term "spondly" means	1	1	.83	.83	
6	Cervical spondylosis is common in women. Why?	.83	1	1	1	
7	Among the following which is the risk factor of cervical spondylosis	1	.83	.83	.83	
8	According to you what is the main cause of cervical spondylosis in young adult	1	1	1	1	
9	Among the following which are the main symptoms of cervical spondylosis?	1	1	1	1	
10	Among the following factors you think can leads to cervical spondylosis?	1	.83	.83	1	
11	In which region of head you think Headache related to cervical spondylosis will be present	1	0.5	1	.83	Modified
12	Among the following option is the sign of nerve damage to spinal cord	1	.83	1	.66	Modified
13	Mental stress leads to cervical spondylosis because of	.83	.67	1	.83	Modified
14	The most effective diagnostic test for cervical spondylosis	1	1	1	1	
15	For Severe Cervical spondylosis which among the following is the key for management	1	.67	.83	.50	Modified
16	For Immobilation of neck, generally is used	1	.83	1	1	

17	Among the following which exercise is ideal for prevention of cervical spondylosis	1	.83	.83	.83	
18	Among the following which is the most effective measure in the prevention of cervical spondylosis	1	.83	.667	.667	Modified
19	A home remedy for mild neck pain and stiffness due to cervical spondylosis is	.83	.83	1	1	
20	In cervical spondylosis patient, a diet should include	.83	.667	.667	.667	Modified
21	A patient with Cervical spondylosis should avoid	1	.83	1	1	
22	The pain of cervical spondylosis can be reduced by the application of	1	.667	.83	.667	Modified
23	When neck is tilted regularly for prolonged period at one particular angle can lead to…	1	.83	.83	1	
24	Preferable average desk height while using computer should be	1	.83	.83	.83	
25	Recommended position of monitor to prevent stress on neck should be	1	.667	.83	.83	Modified
26	Which is the ideal time of hot application beneficial for reducing spondylitic pain	1	.83	.667	.667	Modified
27	Which month is declared as correct posture month	.83	.667	0.5	.667	Modified
28	Recommended position of sleep for cervical	1	.83	.83	1	

S. No.	Question						Result
	spondylitc patients should be						
29	Mention any condition related due to cervical spondylosis	1	.83	.83	.667		Modified
30	What is the complication of cervical spondylosis	1	.83	.83	1		

All the above mention questions that were not able to reach the respectable CVI score were modified then all the questions were send for the round 2.

Second phase of contents validation

After modifying the questions as per the suggestion received from the expert of the round one evaluation, questionnaire was send to the next six experts from the fields. Now the questionnaire was send to new team of 6 experts through Google form and it was mail to the each expert on their respective email ID.

Altogether, 30 questions were analyzed in the second phase of content validation and **Table 2** shows that all items subjected to this phase were validated after the appropriate corrections.

Table 2

S. No.	Question	Relevant to the topic of the study	Adequacy and clarity of contents	Content organization	Language is simple and easy understanding	Result
1	how many vertebrae are there in cervical region	1	1	1	1	Validated
2	According to you , main function performed by Cervical vertebrae is :	1	1	1	1	Validated
3	Why cervical spine is highly prone to injury	1	1	1	1	Validated
4	How you can define cervical spondylosis better	1	1	1	1	Validated
5	Term "spondyle" means	1	1	1	1	Validated
6	Cervical spondylosis is common in women. Why?	1	1	1	1	Validated
7	Among the following which is the risk factor of	1	1	1	1	Validated

	cervical spondylosis					
8	According to you what is the main cause of cervical spondylosis in young adult	1	1	1	1	Validated
9	Among the following which are the main symptoms of cervical spondylosis?	1	1	1	1	Validated
10	Among the following factors you think can leads to cervical spondylosis?	1	1	1	1	Validated
11	According to you , headache in which region of head is due to cervical spondylosis	1	1	1	1	Validated
12	From the below mention options, you think is the sign of nerve damaged due to spinal cord	1	1	1	1	Validated
13	Mental stress leads to cervical spondylosis because of	1	1	1	1	Validated
14	The most effective diagnostic test for cervical spondylosis is	1	1	1	1	Validated
15	Which Among the following option is the best in order to manage cervical spondylosis	1	1	1	1	Validated
16	For Immobilation of neck, generally …………….. is used	1	1	1	1	Validated
17	Among the following which exercise is ideal for prevention of cervical spondylosis	1	1	1	1	Validated
18	Which among the following option is most effective in prevention of cervical spondylosis	1	1	1	1	Validated

19	A home remedy for mild neck pain and stiffness due to cervical spondylosis is	1	1	1	1	Validated
20	A patient suffering from cervical spondylosis should has .... in her or his diet	1	1	1	1	Validated
21	A patient with Cervical spondylosis should avoid	1	1	1	1	Validated
22	Application of................ will help in reducing the pain due to cervical spondylosis	1	1	1	1	Validated
23	When neck is tilted regularly for prolonged period at one particular angle can lead to…………	1	1	1	1	Validated
24	Preferable average desk height while using computer should be	1	1	1	1	Validated
25	In order to prevent stress on neck , while working in desktop , recommend position of monitor should be	1	1	1	1	Validated
26	For reducing the spondlitic pain , which can be considered as ideal time for hot application	1	1	1	1	Validated
27	In months of year, which month is declared as a correct posture month	1	1	1	1	Validated
28	Recommended position of sleep for cervical spondylitc patients should be	1	1	1	1	Validated

29	Name any condition related to cervical spondylosis	1	1	1	1	**Validated**
30	What is the complication of cervical spondylosis	1	1	1	1	**Validated**

DISCUSSION

Content validity is related to the robustness of score interpretations of an instrument and indicates the degree to which these scores measure what they claim to measure **[10, 11]**. In the present study, three content validation phases were performed for the final set of items to obtain a consensus among the experts. According to Benson and Clark **[2]**, when absolute agreement is not reached for an item, the item must be revised until a consensus is reached. However, some items will never reach this standard despite several revisions and should therefore be excluded from the instrument.

In first round of content validation about 53 percent of the questionnaire has attain the respectable CVI score only 46 percent failed to attain the CVI score more than 0.80 therefore those question were modified as per the suggestions received from the experts and then after modification they were send for second phase of validation. Even important changes were also performed in the item wordings for better understanding, and therefore, the instrument was subjected to a re-evaluation of its content validity.

In the second validation phase, 100% of the items reached acceptable levels (above 0.80) for the all four domain, content organization, language is simple and easy to understanding, relevance to the topic and Adequacy and clarity. Now the reliability of the questionnaire a pilot study needs to done for future reference.

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