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RESEARCH ARTICLE

A STUDY TO DEVELOP WEB-BASED HEALTH ASSESSMENT AND HEALTHY HEART INSTRUCTIONS FOR GYM GOERS IN PUNJAB

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ABSTRACT

While regular exercise is essential for maintaining heart health, overexertion in the gym can lead to potential cardiovascular problems. By leveraging the power of technology, gym enthusiasts can undergo thorough health evaluations from the comfort of their homes on smartphones, contributing to a more personalized and proactive approach to fitness management. [(1)]A methodological study was conducted using modified Delphi technique to develop web-based health assessment and healthy heart instructions for gym goers. From the extensive review of literature, a preliminary draft of health assessment and healthy heart instructions for gym goers was prepared and given to 19 panelists to evaluate content in 2 Delphi rounds. The final draft was formatted into google form and face validity also was assessed by the experts. Reliability was calculated by assessing internal consistency using Cronbach alpha, by applying it on 20 gym goers. Usability was tested by obtaining responses via questionnaire (Google form) from same participants on the basis of 10 evaluatory parameters. The mean I-CVI (Item-CVI) scores of web-based health assessment and healthy heart instructions for gym goers in Delphi round 1&2 were 0.99 & 1 respectively. S-CVI/ Avg (Scale CVI/Average) were 0.99 & 1 in Delphi round 1& 2 respectively. SCVI/UA (S-CVI/Universal Agreement) improved from 0.96 to 1 in Delphi round 1& 2 respectively. All 19 experts expressed that google form had a logically ordered format and readable. The font size and response format were appropriate. Reliability of web-based health assessment and healthy heart instructions for gym goers was calculated as r=0.77 using Cronbach alpha. Usability of web-based health assessment and healthy heart instructions for gym goers revealed that it increases awareness about importance of healthy and safe practices among gym goers and helpful in reducing complications related to heart. The study concluded that the web-based health assessment and healthy heart instructions for gym goers is a valid and reliable instrument for increasing awareness about importance of healthy and safe practices among gym goers and helpful in reducing complications related to heart.

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INTRODUCTION

Since the ancient era, Indians are searching for more and more physical and mental strength; although they mainly worship mental strength, they understood that to develop mental strength, a strong body is required. That is why they developed *hatha yoga* to make a healthy body. In recent years besides hatha yoga and orthodox weight lifting, gym centers have become very popular among young population. These gym centers are well equipped with modern machines which make exercise easier and more scientific. [(1)] Gym goers are individuals who actively engage in regular physical exercise within a gym or fitness center. These enthusiasts pursue various fitness goals, such as improving cardiovascular health, building muscle strength, enhancing flexibility, or achieving weight management objectives. Individuals' workout according to their specific needs and preferences.

Gym goers often follow structured fitness routines, combining cardiovascular exercises, strength training, and flexibility exercises to create a well-rounded approach to fitness. These individuals are motivated by a desire to improve their overall well-being, boost their energy levels, and enhance their physical appearance. Some gym goers may have specific fitness goals, such as preparing for a competition, recovering from an injury, or simply maintaining a healthy and active lifestyle. Engaging in regular physical activity is generally associated with cardiovascular benefits and a reduced risk of heart disease. However, individual factors such as pre-existing health conditions, genetic predispositions, or overtraining may contribute to heart-related issues. Research and medical literature have highlighted the correlation between strenuous exercise and adverse cardiovascular events, underscoring the need for moderation and appropriate supervision during gym sessions. [(3)]

Understanding the intricacies of this relationship requires an exploration of scientific literature, medical studies, and expert opinions. By examining both the positive and potential adverse effects of gym activities on the heart, we can develop a more comprehensive understanding of the complexities involved in maintaining cardiovascular health through physical exercise.

MATERIAL AND METHODS

A Methodological research design was adopted with a multistep development (non-experimental) design in online mode. For content validity*, 19 e*xperts from the field of cardiology, Internal medicine, Nursing, Nutrition, IT professionals and Gym professionals with more than 2 years of professional experience were selected using convenience sampling technique. Gym goers between 18- 40 years of age, using smartphones and going gym for at least 1 week to 1 month were selected for reliability of the instrument. Socio-demographic profile of experts were assessed in terms of age, gender, profession, educational qualification, Total professional experience, Participation in development of standards/protocols/checklist/research for benefits of patient, any in service education program attended regarding health assessment and healthy heart instructions for gym goers. Content validity of health assessment and healthy heart instructions for gym goers was established first using Likert scale for CVR, Delphi round 1 & 2 and then face validity was established using a criterion in the form of a questionnaire including logically ordered, readable, font size and response format. Reliability of developed web-based health assessment and healthy heart instructions for gym goers was established with use of internal consistency and computing Cronbach's Alpha. Likert Scale was used for testing usability of developed draft on 20 gym goers.

RESULTS AND DISCUSSION

Development of Preliminary draft: Total 175 items of Web-based health assessment and healthy heart instructions for gym goers were judged by the experts. Out of 175 items, 138 items which scored CVR> 0.42 were retained in the draft. Also 2 items were added to the tool as per the expert's suggestion, bringing the total number of items to 140.

Content Validity Index and Face validity: The draft of Web-based health assessment and healthy heart instructions for gym goers was then subjected to Delphi round I. I-CVI (Content validity of each item) mean for Web-based health assessment and healthy heart instructions for gym goers was calculated to be 0.99. The S-CVI/AVG (Content validity of scale) average for first round of Delphi was 0.99. The S-CVI/UA for 1st delphi round was calculated to be 0.96 which reveals that out of total 140 items all the 19 experts had universal agreement (100%) for 135 items. Total 7 items were added as per expert views and no items were deleted based on CVI criteria. Therefore, based on expert recommendations, several items were refined and merged, reducing the total number from 140 to 46 for Delphi round 2. In the second Delphi round, I-CVI & S. CV/AVG was found to be I each respectively indicating high content validity. Also, S-CVI/UA was found to be I suggesting that all the 19 experts agreed upon all 46 items. Following the Delphi rounds, the draft was formatted into a Google Form, and face validity was assessed by 19 experts. All 19 experts expressed that google form had a logically ordered format and readable. The font size and response format were appropriate.

Table 1. Comparison of content validity index (CVI) of Delphi round 1 & 2

Content validity index	Delphi round 1 (N_e=19)	Delphi round 2 (N_e=19)
Mean I-CVI	0.99	1
S-CVI/Avg	0.99	1
S-CVI/UA	0.96	1

Therefore, it was concluded that the target of high content validity was successfully achieved. The final draft of "Web-based health assessment and healthy heart instructions for gym goers" (Google Form) developed for this study is available at:

https://docs.google.com/forms/d/1KwrcuKAmKEF3lJf1RRDKI8hY4zEIH7Ml8zsbzIlzO74

It includes Demographic profile/ personal information, physical profile (Weight, Height, BMI), personal habits (Smoking, Alcohol Use), health profile (Presence of Heart/ Respiratory/ Kidney Problems and Healthy Instructions), dietary habits and instructions regarding nutritional supplements, gym profile & general instructions.

Reliability and Usability: Web-based health assessment and healthy heart instructions for gym goers was administered on 20 gym-goers to assess its reliability. Internal consistency was evaluated by computing Cronbach's alpha in SPSS that comes out to be r=0.77, indicating an acceptable internal consistency and reliable tool. The usability was assessed based on 10 evaluatory parameters by obtaining responses from 20 gym goers. Among all the gym goers, a large proportion strongly agreed that the information provided was clear and concise (90%), the instructions were easy to understand (80%), all items were practically feasible (75%), the instructions increased awareness about healthy and safe practices (75%), the instructions were motivating and encouraging (75%), the instructions were accessible and available when needed (70%), the instructions were helpful in reducing complications related to heart health (60%), the instructions highlighted all important points related to healthy heart practices (70%), the instructions were highly beneficial (65%) and the instructions were not time-consuming (45%). Overall, the findings indicate that the web-based health assessment and healthy heart instructions are highly usable, effective, and beneficial in promoting awareness about importance of healthy and safe practices among gym goers and reducing complications related to the heart.

Discussion

These findings were supported by a study, "Content Validity of STEM Teachers Instructional Preparedness using content validity ratio" by Ramli N.F. Binti. Talib O. Bin, Manaf U.K. Binti A., Hassan S.A. Binti, (2018), in which a preliminary instrument was made using 51 items which was given to 15 experts for judgment. The results showed that only four items from 51 items were under the CVR critical value of 0.506.[5] Another study was conducted by Gore S., Goldberg A., Huang M.H., Shoemaker M., Blackwood J. (2019) entitled "Development and validation of a quality appraisal tool for validity studies (QAVALS)" by), in which an initial list of 34 possible items was developed and given for judgment.

Table 2. Usability of web-based health assessment and healthy heart Instructions for gym goers Ng=20

S.No.	Parameters	f (%)				
		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1.	Clear and concise information	18(90)		1(5)		1(5)
2.	Easy to understand	16(80)	3(15)			1(5)
3.	All the items practically feasible	15(75)	4(20)			1(5)
4.	Increase awareness about importance of healthy and safe practices among gym goers	15(75)	2(10)	3(15)		
5.	Instructions are motivating and encouraging	15(75)	4(20)	1(5)		
6.	Instructions are accessible and available when needed	14(70)	3(15)	2(10)	1(5)	
7.	Helpful in reducing complications related to heart.	12(60)	7(35)	1(5)		
8.	Highlight all important points related to healthy heart practices among gym goers	14(70)	5(25)	1(5)		
9.	Highly beneficial for gym goers	13(65)	5(25)	2(10)		
10.	Time consuming*	5(25)	1(5)		5(25)	9(45)

After the first round of judgment, 27 items were selected as per CVR calculations, the eliminated items had content validity ratio lower than 0.50 according to Lawshe criteria. [6] The findings were also supported by a study, "To develop and validate the North India Outpatient Department Satisfaction Scale (NIOPDSS)" by Goel S, Sharma D, Singh A (2014) addressing the lack of a culturally appropriate tool to assess patient satisfaction in outpatient clinics. The study involved 942 patients in Chandigarh and followed a rigorous Delphi process to finalize a 17-item questionnaire covering six dimensions. To ensure psychometric soundness, the internal consistency of each domain was assessed using Cronbach's alpha, which ranged from 0.72 to 0.93, indicating strong reliability. [7]

Nursing Implications: The findings of the study can be utilized in all the domains of nursing i.e. nursing practice, nursing education, nursing administrations and nursing research. It is helpful in increasing awareness about importance of healthy and safe practices among gym goers. This study enhances evidence-based practice by linking physical activity patterns with heart health indicators. This study contributes to nursing literature on preventive cardiology and the role of nurses in public health awareness.

Recommendations and Conclusion

Content validity index of Web-based health assessment and healthy heart instructions for gym goers using universal agreement approach was very high, reliable and useful. Hence it is concluded that the developed Web-based health assessment and healthy heart instructions for gym goers is helpful in Increasing awareness about importance of healthy and safe practices among gym goers and reducing complications related to the heart.

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