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Research Article

Developing a Knowledge, Attitude, Practices Questionnaire on Modifiable Risk Factors and Role of Exercise in Ischemic Heart Disease in Urban Population: A Cross Sectional Observational Study

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ABSTRACT

Ischemic Heart Disease (IHD) or Coronary Heart Disease (CHD) or Coronary Artery Disease (CAD) is the most common form of disease that causes heart problems caused by narrowed coronary arteries. The narrowing can be caused by a blood clot or by constriction of the blood vessel, usually due to an atheroma. IHD is the leading cause of death contributing up to 1.2 million deaths according to WHO in India. Disability Adjusted Life Years (DALY) are the sum of years lost due to premature mortality and years of healthy lives lost due to disability. More than 50 thousand DALYs occur due to cardio vascular diseases along with diabetes according to a WHO survey done in 2015. One way of reducing these deaths is by addressing the modifiable risk factors by prevention and prevention is the better cure.

Keywords: Ischemic heart disease; Coronary heart disease; Coronary artery disease; Exercise

INTRODUCTION

IHD is a non-communicable disease that falls under cardiovascular diseases. In terms of prevalence, cardiovascular diseases are among the top 4 leading chronic diseases in India [1]. The projected loss of national income due to these non-communicable diseases in India is expected to be 17.9 million USD by 2030 according to WHO.

A community based epidemiological survey of coronary heart disease and its risk factors was carried out on urban population in Delhi which concluded that prevalence of family members affected by CHD, hypertension, obesity and diabetes mellitus was significantly higher in urban than rural population. Mean levels of serum cholesterol and LDL were higher among urban than rural population [1-3].

METHODOLOGY

Conditions considered under IHD

- Stable angina
- Unstable angina
- Myocardial Infarction (MI)
- Heart failure
- Arrhythmia

Risk factors of IHD

Non modifiable risk factors: Age; Male Gender; Heredity

Modifiable risk factors: High blood cholesterol, Smoking tobacco, High BP, Physical inactivity, Obesity and overweight, Diabetes mellitus, Stress, Alcohol consumption, Diet and nutrition.

Treatment for stable ischemic heart disease may include guideline-directed pharmacologic therapy, coronary revascularization, and lifestyle and behavioral changes, including structured exercise [4]. Most patients suffering from IHD are eligible for monitored and prescribed exercise by Physiotherapists as a part of secondary prevention program [5]. These exercise training regimens are suboptimal and under guidance. Exercise is one of the most cost effective but underused regimen for prevention and education [5]. As physiotherapists, we are duty bound to promote the importance of exercise by making people aware about its indications and advantages. Modifiable risk factors of IHD also play an important role by making behavioral changes as a part of secondary prevention.

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The KAP questionnaire

The 'KAP' questionnaire measures the knowledge, attitude and practices regarding a particular disease in the community serving as an educational diagnosis for them [6]. The study tells us what people know about certain things, how they feel and also how they behave. The Knowledge possessed by a community refers to their understanding of any given topic; IHD and its modifiable risk factors and role of exercise in urban population in this study [7]. Attitude refers to their feelings towards this subject, as well as any preconceived ideas that they may have towards it [7]. Practice refers to the ways in which they demonstrate their knowledge and attitude through their actions [7].

Need of the study

After thorough literature search and as per our best knowledge, IHD specific questionnaires which test the knowledge, attitude and practices related to modifiable risk factors and importance of exercise are limited. The patients are unaware about the risk factors and behavioral modifications that they are required to do in view of their condition. Significant association of CHD prevalence was seen with age, sedentary habits and presence of hypertension in both males and females, and in addition with smoking in males in urban population [8].

Reducing the incidence can be done by increasing adherence to healthy lifestyle by educating, screening, detecting and treating modifiable risk factors since most of the population does not practice heart healthy behaviour on a routine basis [8]. The presence of sub optimal and guided exercise prescription for secondary prevention by Physiotherapists must be made aware to the population. This can be done only after a detailed study regarding the knowledge, attitude and practices of the population regarding the modifiable risk factors and role of exercise for ischaemic heart disease in an urban population.

We conducted a Cross Sectional Observational type of study in Urban Population of Pune, Maharashtra; which lasted for duration of 12 months. Urban populations living under the premises of a municipal corporation who can read and understand English language were included in the study. Population having psychotic problems, perception deficits, problems with hearing and speech, having communication problems was excluded.

Procedure

Ethical clearance from the ethical committee of the institute was obtained. Subjects were selected as per inclusion and exclusion criteria. Informed written consent from subjects was taken. The questionnaire contains close ended questions. It contains 4 domains/sections. They will be as follows;

Section 1: Demographic data

Section 2: Knowledge domain

Section 3: Attitudes domain

Section 4: Practices domain

Validation of the questionnaire

Face validity: Indicates that an 'instrument' appears to test what it is supposed to test [9]. This is a subjective way of performing validation. In this study, we took the help of 5 subject experts and 5 lay persons who answered the following questions;

- Is the length of the questionnaire appropriate?
- Is the questionnaire easy to understand?
- Are the instructions clear?
- Is the language easily understood?
- Is the questionnaire efficiently measuring its purpose?

These questions were marked on a Likert Scale from Strongly Agree, Agree, Neutral, Disagree, Strongly Disagree and the result was interpreted.

Content validity: refers to the adequacy with which the 'content universe' is sampled by a particular test [9]. It is an important characteristic of questionnaire validation that attempts to evaluate a range of information by selected questions. In this study, we took help of 10 subject experts who evaluated each question on the basis of the following question- "Is this question relevant in the questionnaire?"

Factor analysis: This is the most common approach to perform construct validation using a statistical procedure [9]. The questions in the questionnaire underwent factor analysis to make the items more concise and relevant. Validation of the questionnaire was done by experts from the same field (here, Cardiovascular and Respiratory physiotherapists, Cardiologists and Psychiatrists). Necessary modifications according to the feedback post validation were done in the questionnaire.

Reliability test: Reliability was calculated using Cronbach's alpha which is a score that determines the internal consistency within the questions [9].

After designing the questionnaire, piloting of the designed questionnaire was done. Subjects were selected as per the inclusion and exclusion criteria. Each participant was given an information sheet and a written informed consent for participation. Participants were informed that participation was voluntary and they could withdraw at any point.

RESULTS

A questionnaire for knowledge, attitude and practices regarding modifiable risk factors and role of exercise in Ischemic Heart Disease in an Urban Population was developed that had 4 domains in total.

Domain 1

Demographic Data

Domain 2

Knowledge

Domain 3

Attitude

Domain 4

Practices

This questionnaire underwent Face Validation which was described

in terms of percentage for each criterion as described below in Table 1.

Table 1: Summary of face validity criterion.

Question	Percentage
Is the length of the questionnaire appropriate?	90
Is the questionnaire easy to understand?	80
Are the instructions clear?	80
Is the language easily understood?	80
Is the questionnaire efficiently measuring its purpose?	80

Content validity

Content validity was expressed as Percentage of Relevance and Internal Consistency was measured using Cronbachs Alpha for different domains. The results are summarized in Table 2.

Table 2: Content validity in terms of percentage of relevance and internal consistency.

Domain	Relevance (%)	Cronbach's Alpha
Knowledge	73	0.024
Attitude	90	0.639
Practice	75	0.801
Total	77.89	0.44

Relevance of questionnaire was seen for each question separately. Most of the questions were found to be relevant by 90 percent of the evaluators. Out of the 10 questions pertaining to knowledge domain, relevance was 60 percent or less for 4 questions. Similarly two of the four questions from practices domain were termed as relevant by 80% of the evaluators while other two questions were found to be relevant by 70% of the evaluators only.

Factor analysis

Item extraction: Factor analysis showed that the 19 questions were divided into 3 principal components considering loading factor of 60%. These components can explain 96.25 % of the variability of the questionnaire.

Further analysis showed that the Pearson's correlation coefficient was poor for all questions. This indicates all questions are independent and thus it is essential to include all the questions. After checking for validity and reliability of the designed questionnaire, further piloting was done for the questionnaire.

Data analysis of the designed piloted questionnaire

Results of designed questionnaire in Table 3 summarizes scores by piloting the questionnaire on 76 subjects regarding Knowledge, Attitude and Practices regarding modifiable risk factors and role of exercise in Ischaemic Heart Disease in an Urban Population (Tables 3 and 4).

Table 3: Summary of scores in median and standard deviation of the pilot study domain.

Domain	Median ± SD
Knowledge	100 ± 9.99
Attitude	80 ± 13.15
Practice	75 ± 22. 37
TOTAL	84.21 ± 7.87

Table 4: Distribution of population with respect to category of scores domain/category.

Domain	Good	Average	Poor
Knowledge	97.4	1.3	1.3
Attitude	73.7	18.4	7.9
Practice	27.6	68.4	3.9
Total	72.4	27.6	0

DISCUSSION

A cross sectional observational study where a questionnaire of Knowledge, Attitude and Practices in an Urban Population regarding modifiable risk factors of Ischemic Heart Disease (IHD) and role of exercise was designed and it fulfilled all desired and acceptable indices of a standard questionnaire.

Face Validity which indicates that an instrument appears to test what it is supposed to for the questionnaire was determined using percentage of relevance as per Table 1. According to Face Validity of the questionnaire, the length was deemed appropriate by 90%. The language, ease of understanding and instructions were deemed 80% valid. It also measures its purpose by 80% validity

Content Validation which indicates that items that make up an instrument adequately sample the universe of content that defines the variable being measured (here items being every question in the questionnaire), was expressed in terms of Percentage of Relevance. Every question was evaluated for its relevance in the questionnaire by asking each item a common question- "Is this Question relevant?" which was marked on a Likert scale which went as: 5-strongly agree, 4-Agree, 3-Neutral, 2-Disagree, 1-Strongly Disagree.

10 subject experts that included Cardiovascular and Respiratory Physiotherapists, Cardiologists and Psychiatrists marked the items in the questionnaire on its relevancy and Content Validity of the construct was determined.

Percentage of relevance according to Table 2 determined that questions in the Knowledge domain were relevant by 73%.This is because 4 questions in particular from the Knowledge domain received a low score of relevance by the subjects experts. Attitude domain received the highest percentage of relevance of 90%. Practices domain received 75% of relevance.

Internal consistency, which is a correlation between the different items (here items being questions from different domains), was calculated using the Cronbach's Alpha score. A loading score of 0.50 was used for each question. As indicated in Table 2, the internal consistency within the questions of knowledge domain is poor (0.024), whereas it is high in attitude and practices domain (0.639 and 0.801 respectively). The questions from Knowledge Domain need reframing for a higher score of internal consistency. Additional analysis showed that the Pearson correlation coefficient was poor for all questions. This indicates all questions are independent and thus it is essential to include all the questions.

After designing a questionnaire which was valid and reliable, a pilot study was conducted on 76 subjects who were dwellers of an urban area. The sample size of 76 was considered as the questionnaire had 19 questions and for this study n=4 × number of questions in the questionnaire. Since our study is a qualitative analysis, median

scores along with standard deviation were considered.

After conducting the pilot study of the designed questionnaire, it was found that for the Knowledge Domain, the Median score was 100, which is categorized as a Good score. From the entire subject population, 98% had good, 1% had average and 1% had poor knowledge about role of exercise and modifiable risk factors for IHD. These high scores of Knowledge Domain can be due to the major social media awareness programs regarding risk factors along with ease of access to internet that is filled with importance of prevention.

For the Attitude Domain, the Median Score was 80, which is categorized as a Good score. From the subject population, 74% had good, 18% had average and 8% had poor attitude about role of exercise and modifiable risk for IHD.

For the Practices Domain, the Median Score was 75. From the entire subject population, 28% had good, 4% had average and a major 68% of the population had poor practices about role of exercise and modifiable risk factor for IHD. Overall, 72% of the population had Good scores and 28% of the population had Average scores. It was observed that number of patients. Having good score was more for knowledge score. On the other hand only 27.6 % patients had practices regarding role of exercise and modifiable risk factors of IHD. Thus we can say that though the patients have good knowledge and attitude about role of exercise and modifiable risk factors of IHD but they lack good practice. These poor results in practices regarding exercise are similar to findings from a study done in 2016 which tested the knowledge, attitude and practice of exercise for plasma blood glucose control in patients with TYPE-2 Diabetes. The results of this study stated that patients demonstrated good knowledge of exercise for blood glucose control but reported a negative attitude and poor practice of exercise. This consistent bad practice result can be due to an inclination toward sedentary lifestyle. Many subjects addicted to smoking and alcohol consumption face difficulty to quit due to the fear of withdrawal symptoms.

An increase in work demands at work/home/college may lead to a lack of time for exercise. Another reason could be that some patients began their exercise protocol with a mentality of achieving immediate results but ended up being de-motivated. It has been noted in the present study that many patients are unaware of institutions or centres that provide exercise regimens around their vicinity. People who are aware face economic and geographical hurdles, thereby leading to lack of practice.

The results of our study are also in correlation with respect to high scores in knowledge and attitude and low scores in practices with a cross-sectional study conducted to determine knowledge Attitude and Practice (KAP) regarding the risk of CVD in patients attending an outpatient clinic in Kuantan, Malaysia. This study revealed that patients had good knowledge and attitude regarding CVD risk factors yet they still practiced smoking tobacco which should be avoided [6].

Another cross-sectional study included 350 students between ages 17-24 years from 6 private. Universities of Karachi-three medical and three non-medical institutions. A self- reported questionnaire was employed to assess attitude and barriers to healthy practices among the simple random selection of students regarding differences in knowledge and practices regarding healthy lifestyle among medical and non-medical students with assessment of any perceived barriers. It concluded that the knowledge, attitudes and practices of medical students in Karachi suggest that superior knowledge about healthy lifestyle does not necessarily result into better practices [9].

CONCLUSION

The study findings conclude that the designed questionnaire Knowledge, Attitude and Practices on modifiable risk factors and role of exercise in Ischemic Heart Disease in Urban Population had a high percentage of relevance. This questionnaire was developed to be appropriate for use within an urban population.

It received high scores for Face Validity and Content Validity and is reliable and relevant for use. The further performed pilot study concluded that subjects dwelling in an urban population have a good knowledge and attitudes regarding modifiable risk factors and role of exercise but have poor practices regarding the same.

REFERENCES

1. Muhamad R, Yahya R, Yusoff HM. Knowledge, attitude and practice on cardiovascular disease among women in North-Eastcoast Malaysia. Int J Coll Res Int Med Pub Health. 2012;4(1):1-15.
2. Rastogi T, Reddy KS, Vaz M, Spiegelman D, Prabhakaran D, Willett WC, et al. Diet and risk of ischemic heart disease in India. Am J Clin Nutr. 2004;79(4):582-92.
3. Mann D, Zipes D, Libby P, Bonow R. Braunwalds heart disease: A textbook of cardiovascular medicine. Single volume.
4. Mohammad NB, Rahman NA, Haque M. Knowledge, attitude, and practice regarding the risk of cardiovascular diseases in patients attending outpatient clinic in Kuantan, Malaysia. J Pharm Bioallied Sci. 2018;10(1):7.
5. The KAP Survey model.2020
6. Rasouli-Ghahroudi AA, Rokn AR, Khorsand A, Aghajani H, Amini A, Shamshiri AR, et al. Designing and standardizing a questionnaire for evaluating knowledge, attitude, and practice of Iranian adults with cardiovascular diseases about oral health. ARYA Atheroscler. 2013;9(6):350.
7. Buttar HS, Li T, Ravi N. Prevention of cardiovascular diseases: Role of exercise, dietary interventions, obesity and smoking cessation. Exp Clin Cardiol. 2005;10(4):229.
8. Portney LG, Watkins MP. Foundations of clinical research: applications to practice. Upper Saddle. 2009.
9. Sajwani RA, Shoukat S, Raza R, Shiekh MM, Rashid Q, Siddique MS, et al. Knowledge and practice of healthy lifestyle and dietary habits in medical and non-medical students of Karachi, Pakistan. J Pak Med Assoc. 2009;59(9):650.