Original Research Article

An educational intervention on the risk factors of lifestyle diseases among men aged 30-50 years in an urban slum in Coimbatore, Tamil Nadu, India

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ABSTRACT

Background: Lifestyle diseases like hypertension, atherosclerosis, coronary heart disease (CAD), type –II diabetes mellitus, ischemic stroke are Non -communicable diseases leading to premature sickness, disability and death. To determine the risk factors of lifestyle diseases like hypertension and diabetes mellitus and to impart health education on the risk factors of lifestyle diseases and to determine the impact of health education.

Methods: A educational interventional study was conducted in a randomly selected urban slum in Peelamedu, Coimbatore funded by ICMR STS.100 Men in the age group of 30-50 years were administered questionnaire to determine the risk factors of lifestyle diseases. Health education was given to the respondents regarding risk factors. The same questionnaire was given to the respondents after the health education to determine the impact of health education. Statistical analysis was performed by using SPSS version 20. Prevalence of risk factors was presented in percentage. Paired T test was used to find out the effectiveness of Health Education.

Results: Among the study population, the risk factors for lifestyle diseases in our study are smoking (39%), alcohol intake (27%), lack of physical activity (40%), overweight (36%), obesity (14%). The impact of health education on risk factors of lifestyle disease and it was statistically significant with smoking (p=.000), alcohol (p=.02), physical activity (p=.001) and not significant with BMI (p=.71).

Conclusions: Regular health checks can be done to improve the frequency of preventive care and support for behavior change. Effective implementation of lifestyle modifications behavior like healthy diet intake, avoidance of high caloric foods, promoting physical activity help in preventing future complications as a part of primary preventive strategies at primary care level. The importance of lifestyle modifications should be reinforced.

Keywords: Alcohol, Health education, Lifestyle diseases, Overweight, Physical activity, Smoking

INTRODUCTION

Lifestyle diseases like hypertension, atherosclerosis, Coronary Heart disease (CAD), Type –II Diabetes mellitus, Ischemic stroke are Non -communicable diseases leading to premature sickness, disability and death. Lifestyle diseases now emerge as the most severe health problems in developed and developing countries like India. These diseases take a tremendous toll in premature sickness, disability, death and have a major
economic impact on its victim and health care delivery system. ICMR and WHO have predicted that cardiovascular diseases would be the most important cause of mortality and morbidity in India by the year 2015. India is undergoing a rapid health transition with rising burden of coronary heart disease (CHD). Among adults over 20 years of age, the estimated prevalence of CHD is around 3–4 per cent in rural areas and 8–10 per cent in urban areas, representing a two-fold rise in rural areas and a six-fold rise in urban areas between the years 1960 and 2000.

Several studies conducted in India had shown an increase in the prevalence of many risk factors contributing for chronic diseases and strengthens the needs of interventions to reduce the prevalence of these risk factors. Recent figures released by WHO indicated that approximately 80% of the global deaths due to chronic diseases are occurring in developing countries and only 20% occurs in developed countries. There is thus a widespread scientific and public health consensus that the likelihood of developing chronic diseases linked to the exposure of an individual, community or population to a cluster of behavior risk factors such as tobacco use, unhealthy diets and physical inactivity. At present the health care system do not focus on preventive health services. A highly structured family life, education with appropriate intervention and counseling services can tackle many of these issues. Cardiovascular risk factors can be combated and controlled by adherence to current lifestyle recommendations. The INTERHEART study emphasizes the role of behavioral and conventional risk factors in the prediction of CHD risk among Indians. These findings have implication for the health care providers and policy makers in the country due to the fact that all these conventional risk factors are potentially modifiable and are good starting points for prevention. The policy measures by means of legislation and regulatory approaches on food industry or tobacco or physical activity will have large impact on CHD risk factor reduction in the population. The development of an effective education program should impact on self-care, lifestyle change and adherence to medication and lead to better control of diabetes, fewer complications and better quality of life. As the prevalence of non communicable disease is increasing, regular interactive awareness programs involving small groups targeting the vulnerable group of the population is the need of the hour. Early intervention will be critical to reduce the occurrence of lifestyle diseases and associated complications in the vulnerable population. Hence we took up this study to create awareness on risk factors and measures to combat these diseases among the study subjects.

METHODS

The present study was conducted in a randomly selected urban slum in Peelamedu, Coimbatore among men in the age group of 30-50 years funded by ICMR STS. All Urban slums in Peelamedu, Coimbatore were listed. An Urban slum was selected by simple random method. From the selected urban slum, number of men aged 30-50 years was listed from the data already available and among them 100 men who have one of the lifestyle diseases like Diabetes and Hypertension were included in the study was selected by systematic sampling. House to house survey was conducted and 100 men with the above inclusion criteria were selected from the urban slum area and those who have no lifestyle diseases were excluded from the study. After a period of 3 months each participants were made phone calls to ensure their availability for follow-up and everyone responded. The weight and height of the participants were measured by Weighing scale and portable stadiometer which were calibrated and validated by Department of Biometrics prior to the study. Height and weight were measured based on WHO standards with sensitivity of 0.5 cm and 0.1 kg. Zero error was set after every 10 measurements. The participants were made to stand straight with heels, buttocks and back touching the vertical limb of the instrument and stretching upwards to the fullest extent with arms hanging on the side. The head was aligned so that the lower rim of the orbit and the auditory canal were in horizontal plane (Frankfurt plane). Weight was measured without any footwear and with minimal clothing (school uniform) by using Krup’s weighing scale. Based on the height and weight BMI were calculated. Ethical clearance was obtained from Institutional Human Ethics Committee.

Pre–tested Questionnaire was administered to find out the level of risk factors of lifestyle diseases. Health education was given simultaneously to the respondents regarding risk factors after administering questions a month after health education was again repeated to the participants. After a period of 3 month impact of health education was analyzed among the same participants.

Statistical analysis was performed by using SPSS version 20. Prevalence of risk factors was presented in percentage. Paired T test was used to find out the impact of health education on risk factors.

RESULTS

The study was conducted to find out the prevalence of risk factors of lifestyle diseases and also to determine the impact of Health education regarding risk factors of lifestyle diseases. A total of 100 Men in the age group of 30-50 years were involved in the study. The findings of the study are as follows:

Table 1 shows 41% were diabetic and 43% hypertensive and 16 % were both. Among them the diabetes (44.1%) is more in the age group 46-50 years, hypertension (59.4%) is more in the age group 36-40 years and both diabetes & hypertension (29.4%) is more common in the age group 46-50 years.
Table 2 shows the risk factors of life diseases among the study population. Among Diabetics (n=41) 43.9% were smokers, 66.4% were alcoholic, 31.7% were overweight, 19.5% were obese and 58.5% were not doing any physical activity. Among Hypertensive (n=43) 37.2% were smokers, 23.3% were alcoholic, 44.2% were overweight, 14.0% were obese and 25.6% were not doing any physical activity. Among both Diabetics & Hypertensive (n=16) 31.3% were smokers, 25.5% were alcoholic, 25.0% were overweight and 31.3% were doing any physical activity.

Table 3 shows the Impact of health education on risk factors of lifestyle disease and it was statistically significant with Smoking (p=0.000), Alcohol (p=0.02) and Physical activity (p=0.001) and not significant with BMI (p=0.71).

DISCUSSION
The most common life style disease in developing nations like India is Diabetes and Hypertension. The common risk factors for both were obesity, decreased physical activity, stress, hereditary, alcohol, and smoking. Identifying these risk factors will help to reduce the incidence of the lifestyle diseases and effective implementation of lifestyle modifications at primary care level also can reduce the mortality and morbidity rates.15, 17 Hence we conducted a study among 100 people with life style disease like diabetes and hypertension to find out the risk factors and to determine the impact of health education regarding risk factors of lifestyle disease given to the study participants.

In our study around <11.0% of the participants are less than 35 years of age and >89% were in the age group 36-50 years. In our study 41% are having diabetes, 43% are having hypertension and 16% are having both diabetes & hypertension. In our study diabetes (44.1%) is more in the age group 46-50 years, hypertension (59.4%) is more in the age group 36-40 years and both diabetes & hypertension (29.4%) is more common in the age group 46-50 years.
our study we have taken participants with known diabetes and hypertension and so the prevalence is high in our study.

In our study among Diabetics (n=41) 43.9% were smokers, 66.4% were alcoholic, 31.7% were overweight, 19.5% were obese and 58.5% were doing any physical activity. Among Hypertensive (n=43) 37.2% were smokers, 23.3% were alcoholic, 44.2% were overweight, 14.0% were obese and 25.6% were doing any physical activity. Among both Diabetics & Hypertensive (n=16) 31.3% were smokers, 25.5% were alcoholic, 25.0% were overweight, 0% were obese and 31.3% were doing any physical activity. The risk factors for life style diseases in our study are smoking (39%), alcohol intake (27%), lack of physical activity (40%), overweight (36%), obesity (14%). A study conducted by Prasanna D et al in Karnataka identified the presence of various risk factors among noncommunicable disease are smoking (45.4%), alcohol intake (41.8%), lack of physical activity (38.1%), high BMI (49.34%).18

In our study the impact of health education on risk factors of lifestyle disease was statistically significant with Smoking (p=.000), Alcohol (p=.02), Physical activity (p=.001) and not significant with BMI (p=.71). Prabhakaran et al study showed that Change in proportion of risk factors in intervention vs. control sites: tobacco use: 39% to 29% vs. 17% to 20%, median physical activity score: 6 to 11 vs. 8 to 6.19 The limitation of the study was changes in their behavior after health education was assessed subjectively.

CONCLUSION

The prevalence of risk factors for life style diseases in the study is high. The Impact of health education on risk factors of lifestyle disease was statistically significant. Targeting groups who are at risk will help to reduce the burden arising due to lifestyle disease. Implementation of relevant health promoting activities is advised for people who are at risk. Regular health checks can be done to improve the frequency of preventive care and support for behavior change. Effective implementation of lifestyle modifications behavior like healthy diet intake, avoidance of high caloric foods, promoting physical activity help in preventing future complications as a part of primary preventive strategies at primary care level.

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REFERENCES

1. Mane SV, Agarkhedkar SR, Karwa DS, Pande V, Singhania SS, Karambelkar GR. Study of risk factors for lifestyle diseases among adolescents in Western India. Int J Pharm Biomed Sci. 2012;3(4):224-8.
2. Dholpuria R, Raja S, Gupta BK, Chahar CK, Panwar RB, Gupta R, Purohit VP. Atherosclerotic risk factors in adolescents. Indian J Pediatrics. 2007;74(9):823-6.
3. Reddy KS, Shah B, Varghese C, Ramadoss A. Responding to the threat of chronic diseases in India. Lancet. 2005;366(9498):1744-9.
4. Gupta R, Joshi P, Mohan V, Reddy KS, Yusuf S. Epidemiology and causation of coronary heart disease and stroke in India. Heart. 2008;94(1):16-26.
5. McGill HC, McMahan CA, Herderick EE, Malcom GT, Tracy RE, Strong JP. Pathobiological Determinants of Atherosclerosis in Youth (PDAY) Research Group. Origin of atherosclerosis in childhood and adolescence. The American Journal of clinical nutrition. 2000;72(5):1307s-15s.
6. US Centers for Disease Control and Prevention. Targeting Tobacco Use at a Glance 2008. Atlanta, GA: US Centers for Disease Control and Prevention; 2008.
7. Vamadevan AS, Prabhakaran D. Coronary heart disease in Indians: Implications of the INTERHEART study. Indian J Medical Research. 2010;132(5):561.
8. Tawa N, Waggie F, Frantz JM. Risk factors for chronic non communicable diseases in Mombasa, Kenya: Epidemiological study using WHO stepwise approach.
9. Hoang VM, Byass P, Dao LH, Nguyen TK, Wall S. Risk factors for chronic disease among rural Vietnamese adults and the association of these factors with sociodemographic variables: findings from the WHO STEPS survey in rural Vietnam, 2005. Preventing chronic disease. 2007;4(2):1-10.
10. Yusuf S, Hawken S, Ounpuu S, Dans T, Avezum A, Lanas F, McQueen M, Budaj A, Pais P, Varigos J, Lisheng L. Effect of potentially modifiable risk factors associated with myocardial infarction in 52 countries (the INTERHEART study): case-control study. Lancet. 2004;364(9438):937-52.
11. Laskar A, Sharma N, Bhagat N. Lifestyle disease risk factors in a North Indian Community in Delhi. Indian Journal of Community Medicine. 2010;35(3):426.
12. Tawa N, Waggie F, Frantz JM. Risk factors for chronic non communicable diseases in Mombasa, Kenya: Epidemiological study using WHO stepwise approach. Afr J Health Sci. 2011;19:24-9.
13. Shah B, Mathur P. Surveillance of cardiovascular disease risk factors in India: The need & scope. The Indian J Medical Research. 2010;132(5):634-42.
14. Sugathan TN, Soman CR, Sankaranarayanan K. Behavioural risk factors for non communicable diseases among adults in Kerala, India. Indian J Medical Research. 2008;127(6):555-63.
15. Villarel DT, Miller BV, Banks M, Fontana L, Sinacore DR, Klein S. Effect of lifestyle
intervention on metabolic coronary heart disease risk factors in obese older adults. Am J clinical nutrition. 2006;84(6):1317-23.

16. Diabetes Prevention Program Research Group. Reduction in the incidence of type 2 diabetes with lifestyle intervention or metformin. N Engl J Med. 2002;2002(346):393-403.

17. Balagopal P, Kamalamma N, Patel TG, Misra R. A community-based diabetes prevention and management education program in a rural village in India. Diabetes care. 2008;31(6):1097-104.

18. Prasanna D, Rajesh V, Satish Kumar BP, Rajveer S, Kumarswamy M. Assessment Of Lifestyle-Related Risk Factors Contributing For Chronic Non Communicable Disease In Patients Visiting Rural Tertiary Care Hospital. Int Res J Pharm. 2013;4(6).

19. Prabhakaran D, Jeemon P, Goenka S, Lakshmy R, Thankappan KR, Ahmed F, Joshi PP, Mohan BM, Meera R, Das MS, Ahuja RC. Impact of a worksite intervention program on cardiovascular risk factors: a demonstration project in an Indian industrial population. J American College of Cardiology. 2009;53(18):1718-28.

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