BARRIERS TO HEALTHY LIFESTYLE AMONG PEOPLE WITH KNOWN DIABETES AND HYPERTENSION IN SELECTED VILLAGES OF LAKKUR PHC, KOLAR DISTRICT

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ABSTRACT

Introduction: Lifestyle plays an important role in maintaining control in non communicable diseases like diabetes and hypertension diseases and many are not able to practice it due to the presence of multiple barriers.

Objectives: To assess the barriers to a healthy lifestyle in known diabetic and hypertensive patients in selected villages under Lakkur PHC area.

Methodology: The study was cross sectional and a structured interview schedule consisting of 50 questions in 5 domains (diet, physical activity, tobacco use, adherence to drugs and follow-up) was administered to 180 known diabetics and hypertensives residing in 6 villages of PHC area. The total score was classified into high, moderate and low barrier categories.

Results: The proportion of individuals with high barrier was found to be 30(16.7%). The domain of adherence to medication had the highest barrier score 119 (66.1%). The top most barriers identified were lack of variety in healthy food, lack of time to exercise and inadequate awareness about need for life-long medication.

Conclusion: Barriers to healthy lifestyle are common among diabetic and hypertensive patients. Adherence to medication domain had the highest barrier score and lack of variety among healthy food was the topmost barrier identified.

Key words: Adherence to treatment, barrier, healthy lifestyle, non-communicable disease.

INTRODUCTION

Non Communicable diseases (NCDs) are the leading cause of death in the modern world. NCDs are responsible for more deaths than all other causes combined and contribute to 63% of all deaths. [1] Most of the middle and high income countries are burdened with NCDs. [2]

The leading risk factor globally for mortality is raised blood pressure (responsible for 13% of deaths globally), followed by tobacco use (9%), raised blood glucose (6%), physical inactivity (6%), and overweight and obesity (5%). [3]

In India, non-communicable diseases (NCDs) accounted for 40% of all hospital stays and 35% of all outpatient visits in 2004.[4] Also, chronic diseases were estimated to account for 53% of all deaths and 44% of disability-adjusted life-years (DALYs) lost in 2005.[5]As of 2005, India experienced the "highest loss in potentially productive years of life" worldwide.[6]

The four leading chronic diseases in India, as measured by their prevalence, are in descending order: cardiovascular diseases (CVDs), diabetes mellitus, chronic obstructive pulmonary disease (COPD) and cancers and these diseases are projected to continue to increase in prevalence in the near future.[7]The projected cumulative loss of national income for India due to non-communicable disease mortality for 2006–2015 is expected to be USD 237 billion.[8]

Many studies prove that along with weight reduction and physical activity, healthy diet practices are also necessary for healthy lifestyle.[9] In Finland, the North Karelia project, through community-based activity encouraged a healthier diet that resulted in annual coronary heart disease mortality reduction of 73% over 25 years. [10]

Patients who are non adherent to treatment are likely to develop complications [11] and even tobacco in any form is a risk factor for NCDs. Understanding the barriers to lifestyle factors like diet, physical activity, adherence to treatment and tobacco consumption will help in the development of appropriately tailored & culturally relevant approach for intervention in NCDs. Although there are many published studies that look at barriers to individual lifestyle risk factors [12-23], we did not find any literature that comprehensively addresses all the barriers to healthy lifestyle in rural areas which in-turn prompted us to undertake this study.

AIMS AND OBJECTIVES

To assess the barriers to healthy lifestyle among diabetic and hypertensive patients in selected villages of Lakkur PHC area, Malur taluk, Kolar district

MATERIALS AND METHODS

We conducted a cross sectional study during the period of April-June 2015. Institutional Ethics Review Board approval, group and individual consent was obtained for the study.

The study population included all diabetics and hypertensive in 6 selected villages under Lakkur PHC. List of the study population was procured from existing records (from another study).[24]Inclusion criteria included adults (>18 years) who were known diabetics and hypertensives residing in the study area continuously for more than one year.

The sample size was calculated using an estimated 82% prevalence of barriers to healthy lifestyle as reported by a previous study in the Saudi population. [25] For 95% confidence limits and an absolute

precision of 5%, calculated sample size was 162. Anticipating a non-response rate of 10%, the required sample size was inflated to 178. However we interviewed all the 180 diabetic and hypertensive subjects in the study area.

A structured interview schedule was administered to the study population. The interview schedule consisted of 2 parts. The first part included socio-demographic details of the subjects; the second part consisted of a questionnaire to assess the barriers to a healthy lifestyle. The barriers were classified into 5 domains, namely: diet, physical activity, tobacco, drug adherence and follow-up visits. A total of 50 questions about barriers for each domain were constructed and scored on Likert's scale.[26] (1…strongly disagree, 2…disagree, 3…neutral, 4…agree, 5…strongly agree). A pilot study was undertaken on 30 subjects to assess the internal consistency of the questionnaire. Chronbach's alpha was found to be 0.965 which suggested good internal consistency. The maximum total barrier score was 250. The total barrier score was classified into low, moderate and high based on percentiles. (Low barrier<25, moderate barrier 25-75, high barrier >75). Barrier scores were also calculated for each domain.

We identified the top most barriers to healthy lifestyle. For this, a score for each item was obtained by multiplying the weightage into frequency of responses. For each question maximum possible score was 900. We identified the top most barriers to healthy lifestyle and the top most barrier in each domain using the factors with the highest scores overall and also for each domain.

The data were entered in Microsoft Excel and analyzed using statistical package SPSS 16. Data was checked for normality using normality tests and plots. The socio-demographic detail of the study population was described using descriptive statistics like frequencies, median and Interquartile range. Barrier score was measured as a continuous variable and then categorized into low, moderate and high based on quartiles. Association between socio-demographic variables and the barrier scores was tested using Mann-Whitney U and Kruskal Wallis test. A p value of <0.05 was considered as significant for all analyses.

RESULTS

The questionnaire was administered to 180 subjects who were either known diabetics or known hypertensives or both. The age of participants ranged from 31 to 87 yrs, with nearly half (50.5%) in the age group 30 to 59 years. Their mean (SD) age was 59.28 (11.04) years. More than half of the subjects were females (57.8%). In occupation about

53(45.6%) were housewives, 29.4% were agriculturists. Around 44 (24.4%) of the subjects were illiterate and majority had school education 128(71.1%). Most of the respondents were residing in joint families (56.1%). Most of them (88.3%) belonged to Hindu religion. Out of 180 subjects 125 (69.4%) were diabetic and 105(58.3%) were hypertensive. In that 110(88%) were on treatment for diabetes and 83(79.1%) for hypertension. The age and gender distribution of the study population is depicted in Table

Table 2, represents the total barrier score and barrier score of each domain we studied (diet, physical activity, tobacco, adherence to drugs, follow up) classified into low, moderate and high catergories.[11]. This table shows that 16.7% had a high barrier score to health lifestyle, whereas 63% had a moderate barrier score.

The domain of adherence to treatment had the highest proportion of patients in the high barrier category (66.1%).

Table 3, represents the top most barriers to healthy lifestyle that we identified in our study. We found that lack of variety in healthy food, lack of time to exercise and lack of awareness about need for life-

long medication emerged as the top most barriers to healthy lifestyle. Table 3 also depicts the top two barriers with the highest score in each domain.

Table 1: Age and gender distribution

Age group	Males (%)	Females (%)	Total(%)
30-39	4(2.2)	0	4(2.22)
40-49	10(5.56)	18(10)	28(15.56)
50-59	30(16.67)	29(16.11)	59(32.78)
60-69	22(12.23)	33(18.33)	55(30.56)
≥ 70	10(5.56)	24(13.32)	34(18.88)
TOTAL	76(42.2)	104(57.8)	180(100)

Table 2: Frequency of barrier scores in the different domains

Domains	Low barrier*	Moderate barrier*	High barrier*
Diet	49(27.2)	95(52.8)	36(20)
Physical activity	50(27.8)	94(52.2)	36(20)
Adherence to treatment	32(17.8)	29(16.1)	119(66.1)
Tobacco	30(16.7)	113(62.8)	37(20.6)
Follow up	52(28.9)	94(52.2)	34(18.9)
All domains	37(20.6)	113(62.7)	30(16.7)

* Low barrier = <176, Moderate barrier = 176-200, High barrier = >200; Figure in parenthesis indicate percentage

Table 3: Top Barriers in the whole domains and each domain

Barriers		Weight age score (Max: 900)
Top 3 barriers	There is not much variety in healthy food	706 (78.4%)
	I am too busy to find time to exercise	706 (78.4%)
	I am not aware that I have to take tablets for lifelong	706 (78.4%)
Other top barriers in each domain		
Diet	Healthy food is not tasty	704 (78.2%)
	It is difficult to prepare healthy food	704 (78.2%)
Physical activity	I am too embarrassed to exercise	704 (78.2%)
	Exercise has no effect on my health	704 (78.2%)
Tobacco	Tobacco does not cause health problems	702 (78.0%)
	Tobacco kills hunger and boredom during work	704 (78.2%)
Adherence to treatment	Taking more tablets make me feel depressed	704 (78.2%)
	I am bored to take tablets daily	704 (78.2%
Follow up	The clinic timing is not convenient enough for me	704 (78.2%)
	The clinic is too far for follow up	704 (78.2%)

Figure in parenthesis indicate percentage

We looked for association between different socio-demographic variables and barrier scores. Variables like age, religion and gender were tested using Mann-Whitney U whereas education, occupation and family were tested using Kruskal Wallis test. However we found no significant association between barrier scores and any of these variables.

DISCUSSION

The purpose of the study was to assess the barriers to adopting healthy lifestyles among diabetic and hypertensive patients. Our results showed that

barriers to healthy lifestyle were common among these patients thereby highlighting the need for primary care physicians to focus on these barriers and their solutions in addition to the provision of medical treatment.

Barriers to diet

Our study suggested that the physical aspects of healthy diet such as lack of variety in healthy food, difficulty in preparation, and sensory appeal of the food including taste and attractiveness were the perceived barriers in preventing the study subjects from eating healthy. This finding is in contrast to

many studies were time and lacks of will power were the main dietary barriers. [12, 13] A study done in Malaysia showed that the price, food preparation time, and sensory appeal of the food including taste and the ability to satisfy hunger were the perceived barriers to healthy diet. [14] A survey in Kerala, India showed that majority of the patients did not have enough knowledge about the local diets and they attributed it to shortage of dietary advisors at the clinics. [15]

A study done in South India showed that many factors (both patient and health care provider related) influence the outcome of dietary advice. Factors that were found to have a positive impact on compliance were – older age, shorter duration of disease, nuclear family, good family support, less busy work life, higher health consciousness, more frequent visits to dietician, advice that includes elements to promote overall health not merely control of blood sugar, diet counseling that is easy to understand and use and includes healthy food options, cooking methods, practical guidance to deal with lifestyle issues. [16] A survey conducted in England to understand the perceived barriers to healthy food habits were time, cost and mind set. [17]

A study done in Australian indigenous women with diabetes attending a diabetes cooking course, found that barriers to dietary change included lack of family support, social isolation caused by dietary change, poor oral health, depression, cost of food and generational food preferences.[18] A study done in Saudi Arabia showed lack of willpower followed by lack of social support and lack of time and resources as barriers to a healthy diet. [25] However our study didn't show lack of family support and cost as strong barriers which can be due to the fact that most of the patients belonged to joint families where support and money may not be the major factor in diet.

Barriers to physical activity

Our study suggested time factor, tiredness, embarrassment, lack of family support and absence of faith in exercise as the perceived barriers to following a fit life. Many studies have given similar results. A qualitative study done in UK among 32 South East Asians found that although respondents reported an awareness of the need to undertake physical activity, few had put this lifestyle advice into practice. For many, practical considerations, such as lack of time, were interwoven with cultural norms, social expectations and also health problems. [19] A multicentre study done in 3342 adults suggested that those who perceived low social support from their personal environment (i.e. family, friends, school and workplace) were the commonest reason to the absence or decreased physical activity which is different from our study

results. [20] This may be due to increased awareness among the study subjects' family support about the importance of physical activity in non-communicable diseases. A survey conducted in England to understand the perceived barrier to physical activity included work commitment for most of the men and caring of children and old people for women. Also lack of motivation and other priorities in their life were pointed out as perceived barriers. [17] This result was different from ours as our study subjects are residing in a rural area where most of the men are farmers and women are home makers which diluted the issue of work commitment. Also the fact that most of the study subjects were residing in joint families made the issue of caring for children and old people as not a barrier. One study reported that 52% of barriers to exercise were due to unavailability of affordable exercise venues. [21] As the study was in a rural set up plenty of places would be available for jogging, brisk walking and static exercises.

A study done in Saudi Arabia showed that the main barriers to adherence to physical activity were lack of resources, lack of willpower, lack of social support and lack of energy. [25]

Barriers to adherence to treatment

Our study showed daily routine, non availability of tablets, non-awareness to take it lifelong and boredom are the perceived barriers in case of adherence to treatment. A study done in Nigeria with 252 subjects showed forgetfulness, financial constraints, high pill burden, side effects of medication were barriers to low adherence to treatment. [22] The patient related barriers (forgetfulness, cost, boredom, non-awareness) are more compared to prescription related (less time with patients, higher cost prescription and lack of speaking) and pharmacist related (inability to access and limited access to tablets) in many studies were consistent with our study. [23, 27]

Our study result showed not much significance between socio-demographic details (age, gender, education, type of family, occupation, religion) and barrier domains. But many studies showed middle age group and females perceived more barriers in physical activity. [11, 12, 25]

CONCLUSION

The study suggested that barriers are common in patients with diabetes and hypertension. . Adherence to medication domain had the highest barrier score. The top most barriers identified were lack of variety in healthy food, lack of time to exercise and inadequate awareness about need for life-long medication. There should be more individual and

group patient education programs for people with diabetes and hypertension where focus should be on importance of adherence to medication & need for lifelong treatment, varieties and multiple options for healthy diet practices and finding time for physical activity in daily routine.

The limitation of this study was the small number of study subjects and also small geographic area. We should extend the study to a larger population if we are planning to address the issue and make it under a part of a national health programme.

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