Quality of life and risk factors in hypertensive individuals in the field practice areas of a tertiary-care hospital in coastal Karnataka

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Abstract

Background: Hypertension causes about 12.8% of all annual deaths. If uncontrolled, it can lead to stroke and cardiovascular complications. The quality of life (QOL) plays an important role in chronic diseases such as hypertension.

Objective: To assess the lifestyle-related risk factors of hypertension and the QOL of hypertensive patients in field practice areas of a tertiary-care hospital in coastal Karnataka.

Materials and Methods: A cross-sectional study was conducted from January to March 2015 on 122 hypertensive individuals. A semi-structured questionnaire based on WHOQOL-BREF was used. Data were collected by interview technique and analyzed with SPSS, where frequencies and T test was done. QOL was assessed using Mann–Whitney U test and Kruskal–Wallis test.

Result: Those who consumed alcohol ($p = 0.39$) and who did not perform any physical activity were found to have a higher systolic blood pressure ($p < 0.001$). There was also a significant association between age category and systolic and diastolic blood pressures (JNC 7 categories). No significant association was found with QOL with alcohol intake, smoking, lack of physical activity, age, and body mass index, which may be owing to a smaller sample size. The QOL did show a lower trend as the age increased.

Conclusion: Blood pressure is affected by many lifestyle factors such as alcohol intake and lack of physical activity. Health education is required to help control blood pressure and improve QOL.

KEY WORDS: Hypertension, lifestyle risk factors, quality of life, WHOQOL-BREF

Introduction

Hypertension or raised blood pressure is a condition where the blood vessels are continuously exposed to large amount of stress. Hypertension is known as the "silent killer" as many individuals may not appear with symptoms. It causes 45% of deaths owing to cardiovascular disease and 51% of deaths owing to stroke. It can lead to damage of the vascular system, brain, eye, and kidney. Globally, the overall prevalence of hypertension in adults above 25 years was around 40% in 2008.[1]

A community-based survey was carried out in 2007–2008 by ICMR in different states of India to help identify the risk factors for noncommunicable diseases. The study found that the prevalence of hypertension varied between 17% and 21% in the respective states, with differences in rural and urban settings. It also found that prevalence was found increasing with age groups. The modifiable risk factors present for hypertension include tobacco use, harmful intake of alcohol, stress, obesity, unhealthy diet, and lack of physical activity.[2] If these risk factors are not taken into consideration and further health education and awareness is not promoted, the deaths owing to cardiovascular deaths are projected to rise further.[1]

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A 10% relative decrease in injurious use of alcohol, 10% decrease in inadequate physical activity, 30% decrease in the prevalence of current tobacco use in persons above 15 years, and 25% relative decrease in occurrence of increased blood pressure are a set of global targets to be achieved by 2025.[1]

The quality of life (QOL) of individuals with hypertension is also found to play an important role in affecting the overall health and blood pressure. QOL is a subjective component of well being and is defined by WHO, as "the condition of life resulting from the combination of effects and factors that determine the health, happiness (including comfort in the physical environment and occupation), education, social and intellectual attainments, freedom of action and expression, and justice."[2]

This study was carried out to determine the lifestyle risk factors of hypertension and their effects on blood pressure and the QOL of hypertensive subjects in the field practice areas of a tertiary-care hospital in a coastal Karnataka.

Materials and Methods

A cross-sectional study was carried out between January and March 2015 in the field practice areas of a tertiary-care hospital in coastal Karnataka. From the list of all the health centers under the medical college, five rural health centers and three urban health centers were randomly selected for conducting the study.

Sample size was calculated based on a pilot study done in the field practice area of the college, which showed hypertension prevalence of 8%; hence, using the formula $4pq/l^2$, a sample size of 116 was taken as minimum. The distribution of hypertension in other field practice areas was assumed to be approximately the same.

Both male and female subjects above 20 years of age who had been previously diagnosed with hypertension took part in the study. Participants with gestational hypertension were excluded. Written informed consent was taken.

A semi-structured questionnaire was made with the help of other studies[3,4] based on the WHOQOL-BREF Questionnaire,[5] which covers various domains, such as physical and psychological health, social relationships, and environment. Scoring was done based on subjective feelings ranging from very poor to very good, very dissatisfied to very satisfied, and not at all to extremely. Sociodemographic data, educational status, occupation, and associated comorbidities were also taken into consideration. Trained medical interns recorded the blood pressure and helped in collecting the data by interview method in the various centers. The blood pressure was recorded as per the standard requirements in sitting position. The interns explained the details of the questionnaire in the local language, and the participants were given sufficient time to understand and answer the questions.

Statistical Analysis

Data were entered into Microsoft Excel, and analysis was done with the help of SPSS, version 16. Blood pressure was further classified according to JNC 7 Classification and stratification of different age groups done. Body mass index (BMI) was also further classified. Frequencies and *T* tests were done. The QOL was assessed using Mann–Whitney *U* test and Kruskal–Wallis test.

Results

The study included 122 hypertensive subjects, ranging from 32 to 88 years of age. BMI ranged from 17 to 41 kg/m². Approximately, equal distribution of male (49%) and female subjects (51%) took part in this study; 16% of the participants consumed alcohol, 11% gave a history of tobacco use, and 21% said that they perform physical activity. About 52.5% of the participants revealed other comorbidities, such as diabetes and stroke [Table 1].

Mean systolic blood pressure was found to be statistically significantly higher in those who consumed alcohol ($p = 0.039$) and those who did not perform physical activity ($p < 0.001$) as shown in Table 2. Overall, no significant association was found with QOL with age, alcohol intake, smoking, lack of physical activity, and BMI. A significant association was found with total QOL score and educational qualification ($p = 0.001$).

Table 3 shows the median score of QOL and the relationship with associated risk factors, which revealed a better QOL in those who did not consume alcohol and performed physical activities and a higher score in those without other comorbidities. The QOL showed a decrease as age increased, which may have occurred owing to associated comorbidities and lack of emotional or financial support. The percentage of individuals with a median score of QOL was also found to be lower in the age group of 31 to 40 years compared with those above the median score, which may have occurred owing to lack of acceptance of their hypertensive status and lifestyle modification [Figure 1].

Discussion

Our study consisted of an equal group of men and women with hypertension, with a large number receiving only a primary level of education (45%). The majority of the study subjects were homemakers, unskilled workers, and those who were then unemployed. Only 19% of the subjects gave a family history of hypertension, and 15% told they experienced other comorbidities along with hypertension.

We found that the systolic blood pressure was affected by specific lifestyle factors such as alcohol intake, lack of physical activity (which was statistically significant), and smoking. We did not find a relationship of BMI, occupation, education, or increasing age with blood pressure. Yet, there were significant association of the median score of QOL with different age groups and educational qualification. The median score of QOL was also higher in those who did not consume alcohol, performed physical activity (walking), and those who did not reveal other comorbidities.

Table 1: Sociodemographic characteristics of participants

Sociodemographic characteristics	Frequency	%
Gender		
Male	60	49.2
Female	62	50.8
Occupation		
Unemployed	26	21.3
Retired	6	4.9
Unskilled	34	27.9
Skilled	7	5.7
Professional	5	4.1
Student	2	1.6
Homemaker	42	34.4
Education		
Illiterate	16	13.1
Primary education	55	45.1
Secondary education	28	23
PUC	13	10.7
College	8	6.6
Professional	2	1.6
Family history		
Absent	99	81.1
Present	23	18.9
Associated with comorbidities		
Yes	18	14.8
No	64	52.6

Table 2: Risk factors and the mean systolic blood pressure

Risk factors	Mean systolic blood pressure (mm Hg)
Alcohol	
Consumption present	142
Consumption Absent	133
Performed physical activity	
Yes	130
No	138
Smoking	
Yes	139
No	133

Table 3: Median score of quality of life and associated risk factors

Risk factor	Median score of quality of life
Alcohol consumption	
Yes	47.5
No	48
Smoking	
Yes	48
No	48
Performs physical activity	
Yes	47.5
No	47
Comorbidities	
Present	46.5
Absent	48
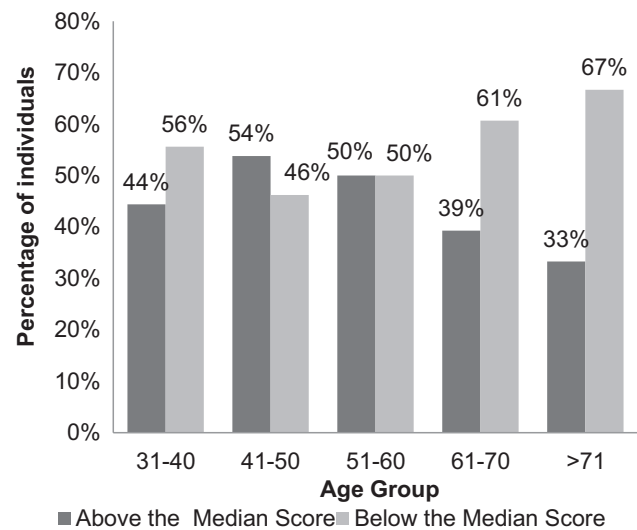
Figure 1: The distribution of hypertensive individuals around the median QOL score.

The WHO brief[1] on hypertension showed that the increasing prevalence of hypertension was owing to aging, harmful use of alcohol, lack of physical activity, and excess weight,[1] which was similar to that found in our study. Although hypertension was more among alcohol users, there was no significant variation with the amount of alcohol consumed. Similarly, a study done by Lee et al.[6] found that alcohol consumption did have an effect on both the systolic and diastolic blood pressures, which varied based on the amount of alcohol consumed per week. Their study also found that smokers showed a lower blood pressure compared with nonsmokers, unlike the finding in our study where there was no significant relationship.

A prospective study done on nurses by Forman et al.[7] found that BMI was the most powerful predictor of hypertension, unlike what was found in our study. This was also seen in a study by Tesfaye et al.[8] who compared in their study three different population groups (Ethiopia, Vietnam, and Indonesia) and showed a significant positive but weak correlation between systolic and diastolic blood pressures and BMI.

The QOL was worse in older age groups and those with associated comorbidities. We also found that the development of hypertension at an early age group affects the QOL more than in the middle age group. This could be attributed to lack of adherence to treatment among the younger age group

and willingness to accept that they experience a disease. Other reasons for nonadherence that could have existed are adverse drug effects, poorly provided instructions, and a poor doctor–patient relationship.

A similar study done by Ha et al.[9] revealed that being male, attainment of a higher education, performing physical activity at a moderate level, and adherence to treatment were associated with a better QOL. We did not find a significant association between sex as we took approximately equal number of men and women, but a significant association was seen with educational status of the subject and they QOL score. Theodorou et al.[10] also showed that their study subjects who were employed, more educated, exercised more, and drank less revealed generally better QOL score. Education affects an individual's ability to understand the magnitude of their disease and adhere to treatment. It also allows people to become more open minded on the different modalities involving their treatment, such as life style changes that an individual may have to follow. Financially, an educated person is more likely to have a better job and income with easier and affordable access to diagnosis and treatment. Yet, a major down point we need to consider in an educated society is the effect of stress, lack of time to engage in exercises, and easier access (through mass media influence, urbanization, and migration) to unhealthy food and habits, which have a major impact on the QOL.

The lower QOL among hypertensive patients with comorbidities allows us to understand the importance of screening, early diagnosis, and proper treatment of chronic conditions. The blood pressure may be drastically affected by lack of emotional and financial support at an older age, as they are more likely to reveal complications owing to hypertension and other comorbidities leading to a poorer QOL.

The limitations of the study were the limited sample size that may have caused discrepancies in the results. The compliance to treatment was not assessed (owing to time and resource constraints), which could have affected the QOL of the participants. Comparison between those with and without hypertension and other comorbidities could have been done to give a better assessment of QOL. Observer bias may have occurred while recording the blood pressure by the interns, and Berksonian bias may have occurred as it was a facilitybased study.

Conclusion

In conclusion, health education and policy changes are required to postpone the age of onset of hypertension and reduction of the risk factors to improve the QOL, which has been highlighted in this study. Further studies can also be done to target younger individuals and promote tracking of blood pressure and screening for diseases, so that we can delay the onset of hypertension.

Acknowledgment

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