

Original Article

Prevalence, awareness and control of hypertension in estate workers in Malaysia

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Abstract

Background: Hypertension continues to be a major causative factor contributing to cardiovascular, cerebrovascular and renal morbidity and mortality. **Aim:** The objective of this study was to assess the prevalence, awareness and control of hypertension in the estate population in Johor, Malaysia. **Patients and Methods:** A mercury sphygmomanometer was used to record systolic and diastolic blood pressures. Cross sectional population survey was carried out in the study. **Results:** The overall prevalence of hypertension in 903 subjects studied was 26.91% (243). A higher prevalence 27.65 % (133) was found in males against 26.07% (110) in females. Awareness of the disease was present in only 39% (96) of which 86.45% (83) received treatment. Among those who received treatment, control of hypertension was present in 15.66% (13). **Conclusion:** The prevalence of hypertension among the estate population is lower than that of the general population of Malaysia, which can be attributed to their regular physical activity but the awareness, treatment, control and follow-up of patients is disappointingly low.

Keywords: Estate workers, hypertension, prevalence, physical activity.

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Introduction

Hypertension continues to be a blight on the community and is a major etiological factor contributing to the cardiovascular, cerebrovascular and renal morbidity and mortality. With obesity spreading as a global epidemic it is a major challenge to the health professionals to control hypertension in the population. According to a survey on the prevalence of hypertension in the Asia Pacific region, it was found to be in the range of 5-47% in men and 7-38% in women. The third national survey on health and morbidity in Malaysia came up with 32.9% of the population to be hypertensive [1].

It is a well known that exercise reduces blood pressure [2], and is advocated as one of the non-pharmacological methods of controlling hypertension. Research has shown an inverse relationship between physical exercise and blood pressure [3, 4].

The aim of our study is to estimate the prevalence of hypertension, to find out the awareness and control of the disease in people with moderate to severe physical activity. Hence the study group was the estate workers whose work entails manual labor.

Patients and Methods

The study is a population based, cross-sectional study aimed at the estate population in the state of Johor in peninsular Malaysia. The study was conducted on the pay day of the workers so as to screen the maximum number of workers. The nature of the study was explained to them and those who consented were included in it. Nine hundred and three persons participated in the screening test. Blood pressure was measured after the subjects rested for at least fifteen to twenty minutes using a sphygmomanometer by two medical doctors and the data

recorded by a trained student. According to the definition made by American Heart Association, hypertension was defined as a systolic blood pressure of > 140 mm of Hg and diastolic blood pressure of >90 mm Hg. The study was conducted over three months in the different estates and aimed to find out 1) the prevalence of hypertension among the estate workers; 2) the family history of hypertension; 3) the awareness of the disease; and 4) the percentage of patients on treatment.

Data on all the subjects examined was given to the health attendants at the estate clinics Those whose hypertension was under control were asked to continue the same treatment. Newly diagnosed patients and those not controlled by treatment or not complying with treatment were advised to consult the nearest government hospitals.

Results

The total number of participants in the screening program was nine hundred and three out of which four hundred and eighty one (53.27 %) were males and four hundred and twenty two (46.73 %) were females (Figure 1). The mean systolic and diastolic blood pressure and standard deviation in males and females are shown in Table 1

males and 131 (31.04 %) were females. A total of 243 (26.91%) subjects were found to be hypertensive of which 133 (27.65%) were males and 110 (26.91 %) were females. Statistical analysis using Pearson chi2 test was done and the difference between blood pressure values of males and females was found to be statistically significant ($P = 0.006$) (Table 2).

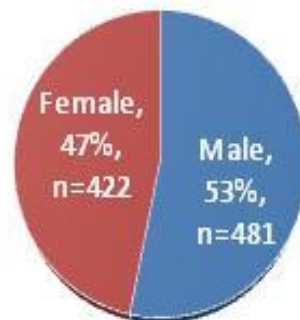


Fig. 1 Percentage of male and female respondents in Johor estates

Table 1 Description of blood pressure among respondents

Sr.	Blood Pressure	Gender	Mean*	Standard Deviation*	Minimum*	Maximum*
1	Systolic Blood Pressure	Male (n=481)	124.7464	18.39662	90	220
		Female (n=422)	122.0142	20.05041	90	190
		Total (n=903)	123.4695	19.22492	90	220
2	Diastolic Blood Pressure	Male (n=481)	79.62578	11.34484	60	120
		Female (n=422)	76.36967	11.93374	60	110
		Total (n=903)	78.1041	11.73045	60	120

* All values in mmHg

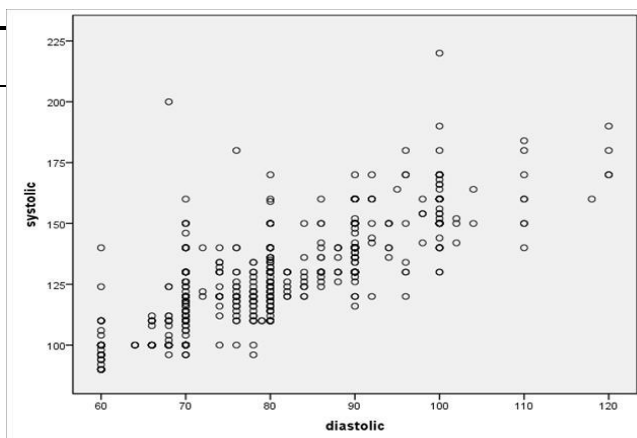


Fig. 2 Correlation coefficient between Systolic Blood Pressure (SBP) and Diastolic Blood Pressure (DBP)

Table 2 Comparison of blood pressure level for male vs. female

Sr	Blood Pressure status	Gender		Total
		Male	Female	
1	Normotensive <120/<80	159 (33.06 %)	181 (42.89%)	340 (37.65%)
		189 (39.29 %)	131 (31.04%)	320 (35.44%)
2	Pre-hypertensive 120-139/80-89	133 (27.65 %)	110 (26.07%)	243 (26.91%)
		481 (100%)	422 (100%)	903 (100%)

Pearson $\chi^2 = 10.3020, P = 0.006$

A total of 340 (37.65 %) subjects were found to be normotensive. Of the 481 males screened, 159 (33.06 %) were normotensive. Of the 422 females screened, 181 (42.89 %) were normotensive. Overall 320 subjects were found to be prehypertensive of which 189 (39.29 %) were

Pearson’s correlation coefficient showed a significant correlation between the systolic and diastolic blood pressure to be $r = 0.82$ with a P -value < 0.001 (Figure 2).

Family history of hypertension was present in two hundred and fifty five subjects and awareness of the disease was present in ninety six individuals and eighty three patients were on treatment. Of the 83 patients on treatment, effective control of hypertension was found only in 13 of them.

Discussion

During the past half a century, hypertension has been identified as a major risk factor in the development of cardiovascular disease, morbidity and mortality [5]. Researchers have also observed that South Asians are predisposed to hypertension and coronary artery diseases

possibly due to insulin resistance [6]. In Malaysia hypertension is found to independently affect cardiovascular disease adversely in the past five decades. It has been estimated that there are one billion individuals with hypertension worldwide and 4.8 million in Malaysia alone. A National Health and Morbidity survey done in 2004 by a group of researchers has found the prevalence of hypertension among adults thirty years and above to be 40.5% [1].

In this study, the overall hypertensive subjects were 243 reflecting 26.91% of the screened estate population. The prevalence of hypertension observed in this study is significantly lower than that of the national survey done in 2004 in the general population. This is possibly due to the fact that the study subjects were manual laborers and the nature of their occupation engaged them in regular physical activity. Epidemiological data from various studies have shown a strong correlation between blood pressure and physical activity [4, 7, 8]. Research has proved that reduction in blood pressure occurs with exercise or increased physical activity [9-11] and improving exercise capacity and quality of life [12]. The antihypertensive effects of exercise has been found to reduce the need for antihypertensive drugs to a large extent [13].

The prevalence of hypertension was found to be higher in males in this survey (27.65%) than that of (26.07%) in females. A significant difference in the prevalence between males and females was found using Pearson's χ^2 test ($P = 0.006$).

Coming to the family history, 255 (28.25% individuals revealed a family history of hypertension in one or both parents. Association of family history of hypertension and its prevalence have been studied by other researchers and has been proved that the incidence of hypertension is twice as much as seen in those without family history [14]. Awareness of hypertension in our study was observed only in 96 (39.50%) individuals but higher than that of the National Health and Morbidity Survey (NHMS) of Malaysia in 2004 where the awareness was 34.6% [1].

243 (26.91%) were found to be hypertensive. 96 (39.5%) individuals had awareness of the disease and 83 (34.16%) received treatment whereas only 13 (5.35%) of them had good control of hypertension. The newly diagnosed patients were 147 (60.49%). Those patients on treatment had poor compliance as they did not carry the drugs to the work spot. Poor compliance to treatment has been addressed in many studies as to how to improve adherence to treatment. Prescribing pattern in primary health care clinics not in accordance with the guidelines is one of the reasons for non – adherence to treatment. Simplifying the dosage regimens by reducing the number of doses and motivating the patients has largely increased patient compliance to treatment [15-17]. Researchers have discussed the so-called “therapeutic inertia,” i.e., “the failure of health professionals to initiate or intensify a

therapy when this is indicated” [16]. Reinforcing the interventions by pharmacists at the hospital clinics by educating and counseling the patients has largely shown to have a better outcome in the reduction of blood pressure [18].

A significant number of the population did not seek treatment or have routine medical check-up which could be the reason for the tardy diagnosis. Most of them were diagnosed only when they were symptomatic, had complications of hypertension like stroke or myocardial infarction or when they attended the clinic for some other illness. A nationwide telephone survey conducted in Malaysia to test the patients' knowledge and attitude to treatment and control of hypertension has revealed that patients gave up treatment owing to lack of motivation and concern over the side effects [19]. Improved communication with patients, patients' education, assessing side effects like erectile dysfunction arising out of antihypertensive medications, diligently sharing the decision in choosing the alternatives will certainly go a long way in attaining the goal. The early diagnosis of hypertension and better control of the same can be achieved with the co-operation of the health care professionals and workers taking a greater responsibility in educating the patients, adhering to the guidelines in prescribing the drugs, monitoring the adverse effects and helping patients choose alternatives [20].

Conclusion

Prevalence of hypertension has been found to be lower in the estate population. This could be due to their regular physical activity playing a pivotal role in bringing down the blood pressure. Physical activity offers protection in cardiovascular diseases and physical inactivity is a risk factor for cardiovascular disease by increasing the incidence of obesity, diabetes and hypertension. In rural areas, early diagnosis, close follow-up and referral of the patients by health assistants will have a significant impact on the reduction and control of hypertension.

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