Introduction

Hypertension is the major cause of cardiovascular disease (CVD) morbidity and deaths worldwide.[1,2] It accounts for about 45% of all cases of heart disease, and 51% of stroke related deaths globally.[3] Evidence suggest that CVDs are increasing in prevalence in sub Saharan Africa (SSA),[4,5] and hypertension has been pointed out as one of the leading risk factors of CVDs in the region.[6] The prevalence of hypertension in SSA is also expected to lead to an increase in hypertension complications.[7] The current prevalence of hypertension in SSA is already as high as those observed in developed countries, especially in urban areas.[8] It is estimated that the prevalence of hypertension in SSA would increase further mainly due to the absence of effective preventive measures.[9]

Evidence suggests that hypertension rates in Ghana are among the highest in Africa with low rates of awareness among people living with the condition.[10] Although a number of studies have been conducted on hypertension in Ghana, most of these have focused on its prevalence and associated risk factors.[11] Risk perceptions of developing hypertension especially in urban poor settings have not been fully assessed in Ghana, even though urban poor residents are faced with a high burden of non-communicable diseases.[12] A recent study in three urban poor communities in the capital, Accra recorded an overall hypertension prevalence of 28.3%.[13]

Risk perceptions are important because to a large extent they control behavior and have a greater influence on health outcomes such as hypertension, more than actual risk factors. Health behavior theories such as the social cognitive theory and the health belief model indicate that a high perceived risk of harm should motivate individuals to take action to reduce their risk.[14-16] If individuals are unaware of the risky nature of their actions, motivation for change cannot take place.[17]

This paper aims to assess the risk perceptions of developing hypertension among lay healthy individuals (undiagnosed with hypertension) and compare these risk perceptions to their actual hypertension status (as measured). The study also aims to assess which modifiable risk factors predict these risk perceptions.

Methods

Setting

The study was conducted in James Town, Ussher Town and Agbogbloshie; three urban poor communities in Accra, Ghana. The major economic activities in these communities are fishing and petty trading. There is easy access and availability to alcohol and cigarettes in these communities because individuals who engage in petty trading stock them. The communities are also characterized by high population density, poor housing structures and very limited spacing in-between structures. The crowded nature of the settlements makes any form of recreational or leisure-time physical activity difficult to achieve. James Town and Ussher Town are ancient and

native communities of the Ga-Dangme ethnic group. Agbogbloshie on the other hand is a migrant and heterogeneous community.

Data /Sampling procedure

This study uses data from the urban poverty and health survey conducted by the Regional Institute for Population Studies (RIPS). The communities were divided into enumeration areas (EAs); proportionate to the size of the localities. In each EA, households were randomly chosen, and each member in a sampled household between the ages of 15-59 responded to the questionnaire. The data were collected using an interviewer-administered questionnaire. Respondents who answered the questionnaire then had their blood pressure (BP) measurements taken by trained field personnel. In total, a representative sample of 974 individuals were eligible to be interviewed out of which 714 individuals had their BP measurements taken. Some respondents refused BP measurements even though they responded to the individual questionnaire.

Exclusion criteria

Individuals who self-reported a prior diagnosis of hypertension by a medical professional, those on antihypertensive medication, pregnant women and women who had given birth in the last six months preceding the study were excluded from the sample.

Inclusion criteria

Respondents who had not self-reported a prior diagnosis of hypertension aged 15 to 59 (males) and 15 to 49 (females) made up the sample. 617 individuals made up the analytic sample for this study.

Measurement

Respondents were asked what they thought their chances or risk of developing hypertension was. Risk perceptions were therefore categorized as no risk and some risk (low or high). BP was measured on the seated participant's arm after a five to ten minute rest using a validated automated BP monitoring device.[18] Three measurements were taken at 1 to 2 minute intervals.[19] The average of the three readings was used for the analysis. Hypertension was then defined as a BP reading of ≥140/90 mmHg. Physical activity was categorized as ≥3 days and <3 days in a week of moderate-intense household activity. Alcohol consumption was classified into non-drinkers, occasional drinkers and regular drinkers based on the pattern of consumption. Smoking was measured based on current smoking status and was categorized as currently smokes and currently not smoking. Body mass index (BMI) was calculated as weight (kg) divided by standing height (m^2) and grouped as normal, overweight and obese.

Data analysis

Results were expressed as percentages or mean ± standard deviation (for continuous variables). Bivariate comparisons were performed using cross tabulation to establish a relationship between perceived risk and actual hypertension status. A binary logistic regression was used to assess factors that predict risk perceptions ('some risk'); adjusting for sex, place of residence and age. All statistical analyses were performed using SPSS 21 for Windows (© Copyright IBM Corporation and other(s) 1989, 2012).

Results

Characteristics of respondents

More than half (55.8%) of the respondents in the study were females. The sample had a mean age of almost 32 years; a mean systolic BP of 122 mmHg and a mean diastolic BP of 77 mmHg. More than one-thirds of the respondents were either overweight or obese. Respondents who were current smokers and those who consumed alcohol regularly made up less than 15% and 20% respectively of the sample. Close to two-thirds of the respondents in the study indicated that they had no chance of developing hypertension.

Perceived risk and hypertension status

Of the 617 respondents in the analytic sample, 131 were hypertensive per the BP measurements. This gives an overall prevalence of 21.2% (95% Confidence Interval; 18.2-24.6); 25.3% and 18% for males and females respectively. More than half (51.9%) of the 131 individuals who were hypertensive were those who indicated they had no chance of developing hypertension. More males (56.5%) than females (46.8%) were in this category. The association between self-assessed risk of hypertension and actual hypertension status (per BP readings) was statistically significant (p=0.02).

Factors related to risk perception

Results of the regression model indicates that occasional and regular consumption of alcohol, as well as being obese predicted the perception of individuals with regard to assessing their chances of becoming hypertensive at a point in time. Individuals in these categories were more likely to perceive themselves to be at some risk of developing hypertension compared to non-drinkers (in the case of alcohol consumption) and compared to normal and overweight individuals (in the case of BMI status).

Discussion

The results suggests that there is a disconnect between perceived risk of hypertension and actual hypertension status. In other words, majority of the individuals who self-assessed that they had no chance of having hypertension, were in fact hypertensive (using the average of their three BP measurements). Such individuals are susceptible to hypertension related morbidity or complications. Hypertension by its nature shows little or no symptoms at all.[20,21] As such, the

adverse health outcomes of hypertension are compounded because such individuals do not consider themselves to be at risk and may also not be aware of their BP status.[22] This may increase the likelihood of stroke, heart attack, kidney failure, rupture of blood vessels and cognitive impairment.

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