Journal of Human Hypertension (1999) 13, 547–549

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ORIGINAL ARTICLE

Prevalence of hypertension in a Bangladeshi adult population

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Keywords: Bangladesh; hypertension; adult

Introduction

Representative data on the prevalence of hypertension in a Bangladeshi population are lacking. A few studies with small sample sizes have been done which cannot provide sufficient information due to their non-representativeness of Bangladesh at large. Moreover, estimates for adults are lacking in most of the studies. In this report we synthesise these articles to describe the prevalence of hypertension in a larger sample of a Bangladeshi adult population.

Methods

Articles published on the prevalence of hypertension among the people of Bangladesh were identified by MEDLINE search. Care was taken not to include more than one study per survey. We could locate six articles.[1–6] Three[1–3] of them were excluded from the current analysis because they did not describe the essential information, criteria for diagnosis of hypertension. The remaining three[4–6] were included in this analysis for an adult age group of 18 years or older.[7] One article[4] used this cut-off point for age but two others[5,6] did not. Therefore, we considered the nearest cut-off point they used: 20 years[5] and 15 years.[6] Then the prevalences of hypertension and their 95% confidence intervals for the individual studies were calculated by using the data presented. Finally a pooled estimate was obtained for these three studies.

Results

The studies are summarised in Table 1, and the calculated prevalences and their 95% confidence intervals are presented. The pooled estimates for the prevalence of hypertension in 13288 adults (urban 8172, rural 5166) is 11.3% (95% confidence interval 10.8% to 11.8%). It is evident from the table that the data gathered so far and synthesised in this article report the prevalence of hypertension in Dhaka only.

Discussion

One important point to note is that none of these studies used classical definition for hypertension which incorporates systolic and diastolic blood pressure levels and history of medication for hypertension.[7] Two studies[4,5] calculated prevalence on the basis of diastolic blood pressure. The third[6] used two separate estimates using cut-off points for systolic ($>$140 mm Hg, 10.5%) and diastolic blood pressure (9.0%) (Table 1) but not their combination. We used the latter estimate to maintain comparability with other studies included in this analysis. As regards to the history of antihypertensive medication, two studies[4,5] made confusing (or incomplete) statements. They presented tables for a subgroup of subjects with a diastolic blood pressure $\geqslant$95 mm Hg in which the proportion of subjects with antihypertensive medications were mentioned. However, it was not mentioned what they did if there was somebody with antihypertensive medication and a diastolic blood pressure $<$95 mm Hg. The third study[6] mentioned nothing about antihypertensive medication. Therefore, the prevalence presented here is a conservative one. Moreover, none of the studies presented age-standardised prevalence, which is necessary for comparability with other populations. We also did not calculate it because the age limits presented were confusing or age groups were not suitable for such calculation.

Although this simple meta-analysis does not provide data representative of Bangladesh, it gives a more informative estimate than individual studies do. Large-scale study using classical definition for hypertension that would be representative of Bangladesh at large remains to be done.

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Received 7 January 1999; revised 25 February 1999; accepted 2 March 1999

Table 1 Studies on hypertension in Bangladeshi population that were identified by MEDLINE search

First author year	*Place of study*	*Subjects*	*Sampling procedure*	*Response rate (%)*	*Who measured BP*	*Supine or sitting*	*Measurement, reading*	*4th or 5th diastolic phase*	*Criteria for diagnosis of hypertension*	*Associated factor studied*	*Age group*	*No.*	*Prevalence (%)*	*Meta-analysis for adults**			
														Age	*No.*	*Prevalence (%)*	*95% CI***
Malik 1976[1]	Dhaka and Narayanganj	Out-patients of three tertiary level hospitals, inhabitants (?) of Motijheel, inhabitants of Kanchan, staffs of Karim Jute Mill	‡‡‡	‡‡‡	‡‡‡	‡‡‡	‡‡‡	‡‡‡	‡‡‡	None	All	7062	1.1	Not included			
Ullah 1976[2]	Mymensingh	Staffs of Agriculture University and Mymensingh Medical College, workers of different jute mills	‡‡‡	‡‡‡	‡‡‡	‡‡‡	‡‡‡	‡‡‡	‡‡‡	Age	⩾21	1177	2.3	Not included			
Chowdhury 1981[3]	Dhaka	Inhabitants of a village	All	67.5	‡‡‡	‡‡‡	‡‡‡	‡‡‡	‡‡‡	None	⩾6	655	5.3	Not included			
Islam 1979[4]	Dhaka	Staffs of Bangladesh Secretariat	All	98.6	‡‡‡	Sitting	‡‡‡	5th	DBP ⩾90 mm Hg antihypertensive medication(?)	Age	⩾18 (?)	8172	13.3	⩾18	8172	13.3	12.6–14.1
Islam 1983[5]	Dhaka[#]	Inhabitants of a village	All	75.0	‡‡‡	Sitting	‡‡‡	5th	DBP ⩾90 mm Hg, antihypertensive medication(?)	Age	⩾10	5026	6.7	⩾20	4111	7.8	7.0–8.6
Sayeed 1994[6]	Dohar, Dkaka	Inhabitants of five villages	All	70.6	‡‡‡	Sitting	3, Mean	5th	DBP 90 mm Hg	Age, BMI, glucose	⩾15	1005	9.0	⩾15	1005	9.0	7.2–10.7
														Total	13288	11.3	10.8–11.8

BP indicates blood pressure; CI, confidence interval; DBP, diastolic blood pressure; ‡‡‡, not mentioned; BMI, body mass index.
*Our prior definition of adult was the subjects aged 18 years or above. However, we used data presented for the nearest age group.
**95% CI was calculated as $p \pm 1.96[p(1-p)/n]^{0.5}$, where p indicates proportion of subjects with hypertension.
#Authors did not mention exact location of the village, but stated that it was 20 km away from Dhaka city.

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