

Research Article

Prevalence of Behavioral Risk Factors of Noncommunicable Diseases in a Rural Population of Bangladesh

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Received: December 05, 2016; Accepted: February 09, 2017; Published: February 14, 2017

Abstract

Behavioral risk factors reduction is a key to Noncommunicable Diseases (NCDs) control. This survey on NCD risk factors was done in randomly selected cross-sectional sample of 443 rural individuals aged 15 years or older. More than three in ten people used tobacco in some form, and more than nine in ten used extra salt while taking meal. All of them had low fruit and vegetables intake (<5 gm/day). About four and one percent were taking medicines for hypertension and diabetes, respectively. In conclusion, prevalence of tobacco and added salt consumption is fairly high in this rural Bangladeshi sample. Local level health infrastructure and health workers should be used to control these risk factors in rural communities.

Keywords: Non-communicable disease risk factors; Rural community; Bangladesh

Introduction

Non-Communicable Diseases (NCDs) are plaguing both developed and developing countries. Tobacco use, physical inactivity, harmful use of alcohol, low consumption of fruit and vegetables and high intake of salt are first line risk factors in Bangladesh and these are generally targeted for NCD control [1,2]. If these risk factors can be controlled at first hand, NCDs could be largely controlled. Health system in Bangladesh is yet to come up with risk factor approach of NCD prevention. In spite of adequate human resource at community level, screening are not done routinely [3]. Before executing any screening and risk factor reduction intervention, it is necessary to know the actual situation at the community. Therefore present study was carried out to determine the prevalence of these risk factors in a village of Bangladesh.

Methods

This study was done in 2011 among residents aged 15 years or older of Ekhlaspur village (Chandpur district). Ekhlaspur Center of Health (ECOH), a non-profit community based non-governmental health care provider has been conducting health examinations in Ekhlaspur since 2001. Ekhlaspur has a total of 1088 households [4]. Five hundred households were approached randomly and one eligible person per household was selected using Kish method [5].

Questions on tobacco (smoking and smokeless) use asked. Amount of added salt while taking meal, fruit and vegetables intakes were determined showing, spoons, cups and show-cards. History of current medication for hypertension and diabetes was obtained. Data were collected by experienced local health assistants of ECOH.

Verbal consent was obtained from the respondents. Prevalence (95% confidence interval) of risk factors were obtained, which were adjusted to WHO's world standard population.

Results

Altogether 443 adults (225 men, and 218 women) participated. The mean age and schooling of respondents was 40 years and 5 years respectively. Results are presented in (Table 1). Overall age standardized prevalence of current smoking and smokeless tobacco use was 17.5% and 20.2% respectively. Women did not smoke but used smokeless tobacco (27.4%) more than men did (13.8%). Prevalence of taking added salt was very high (93.2%). None of them took minimum 5 servings of fruit and vegetables/day. As defined by history of current medication, age standardized prevalence of hypertension and diabetes was 3.7% and 1.0% respectively.

Discussion

Although a small and single location study, like this one has its inherent limitations for generalizability but our findings indicate that local level health workers could be useful in collecting risk factor data.

Our most striking finding is low intake of fruit and vegetables by all respondents, which is not so far from national data (98%) [6]. This is consistent with data from India [7] and Nepal [8]. We, in fact, expected a little lower prevalence because this study was conducted in a remote village. Prevalence of both smoking and smokeless tobacco use is high in men, but similar to India and Nepal [7-8]. However, these prevalence are lower than national level findings [6] because of ongoing anti-tobacco campaign of ECOH.

Hypertension and diabetes are major risk factors of stroke and heart attacks. Although hypertension (prevalence, 20% [9]) and diabetes (prevalence 6% [10]) common problems in rural areas of Bangladesh, their treatment status is far from adequate in this community. There is a need to explore the reasons for such a low treatment rate. A very high dietary salt intake (17 gm/day) [11] should receive adequate attention for community interventions.

Table 1: Prevalence of behavioral risk factors for NCDs among residents of Ekhaspur village.

Age (year)	Number of subjects	Smoking	Smokeless tobacco use	Tobacco use in any form	Use of extra salt on the table	Fruit/ vegetables <5 servings consumption per week	History of medication for hypertension	History of medication for diabetes mellitus
Men and women								
15-24	72	5.6	1.4	6.9	90.3	100	0	0
25-34	92	9.8	6.5	15.2	91.3	100	3.3	0
35-44	107	18.7	17.8	34.6	95.3	100	0	0.9
45-54	88	36.4	26.1	56.8	88.6	100	2.3	0
55-64	42	19	52.4	61.9	97.6	100	9.5	4.8
65+	42	26.2	47.6	61.9	92.9	100	14.3	2.4
Total (Crude)	443	19.0 (15.3-22.7)	20.5 (16.7-24.3)	35.7 (31.2-40.2)	92.3 (89.8-94.8)	100 (100-100)	3.4 (1.7-5.1)	0.9 (0.02-1.8)
Total (Age stadardized)#	443	17.5 (14.0-21.0)	20.2 (16.5-23.9)	33.8 (29.4-38.2)	92.3 (89.8-94.8)	100 (100-100)	3.7 (1.9-5.5)	1.0 (0.1-1.9)
25-64 (Age standardized)#	329	20.1 (16.4-23.8)	22 (18.1-25.9)	38.2 (33.7-42.7)	92.9 (90.5-95.3)	100 (100-100)	3.2 (1.3-5.1)	1.1 (0.0-2.2)
Men								
15-24	37	10.8	0	10.8	86.5	100	0	0
25-34	37	24.3	2.7	24.3	89.2	100	0	0
35-44	55	36.4	16.4	49.1	94.5	100	0	1.8
45-54	55	58.2	10.9	60	83.6	100	3.6	0
55-64	18	44.4	33.3	55.6	94.4	100	5.6	11.1
65+	23	52.2	43.5	69.6	91.3	100	13	4.3
Total (Crude)	225	37.3 (31.0-43.6)	14.2 (9.6-18.8)	44.0 (37.5-50.5)	89.3 (85.3-93.3)	100 (100-100)	2.7 (0.6-4.8)	1.8 (0.1-3.5)
Total (age stadardized)#	225	34.1 (27.9-40.3)	13.8 (9.3-18.3)	39.9 (33.5-46.3)	89.5 (85.5-93.5)	100 (100-100)	2.6 (0.5-4.7)	2.1 (0.2-4.0)
25-64 (age standardized)#	165	39 (32.6-45.4)	13.6 (9.1-18.1)	44.9 (38.4-51.4)	90.3 (86.4-94.2)	100 (100-100)	1.8 (0.0-3.8)	2.4 (0.1-4.7)
Women								
15-24	35	0	2.9	2.9	94.3	100	0	0
25-34	55	0	9.1	9.1	92.7	100	5.5	0
35-44	52	0	19.2	19.2	96.2	100	0	0
45-54	33	0	51.5	51.5	97	100	0	0
55-64	24	0	66.7	66.7	100	100	12.5	0
65+	19	0	52.6	52.6	94.7	100	15.8	0
Total (Crude)	218	0	27.1 (21.2-33.0)	27.1 (21.2-33.0)	95.4 (92.6-98.2)	100 (100-100)	4.1 (1.5-6.7)	0.0 (0.0-0.0)
Total (age stadardized)#	218	0	27.4 (21.5-33.3)	27.4 (21.5-33.3)	95.4 (92.6-98.2)	100 (100-100)	4.3 (1.6-7.0)	0.0 (0.0-0.0)
25-64 (age standardized)#	164	0	31.6 (25.4-37.8)	31.6 (25.4-37.8)	95.9 (93.3-98.5)	100 (100-100)	3.9 (0.9-6.9)	0.0 (0.0-0.0)
χ^2/p (men compared to women)		0.001	0.001	0.001	0.016	---	0.4	0.12

*Values in the parentheses are 95% confidence intervals

#Standardized to the age distribution of the new WHO world standard population (2000-2025)

Men and women were compared using Chi-square test.

Conclusion

Although this is a snapshot of this rural population it gives us alarming picture of high tobacco and salt intake, and low intake of fruit and vegetables and low treatment rates of hypertension and diabetes in remote communities of Bangladesh. Community level health facilities/organizations should be utilized for controlling NCD risk factors in Bangladesh.

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