PEER REVIEW HISTORY

This paper was submitted to the JECH but declined for publication following peer review. The authors addressed the reviewers' comments and submitted the revised paper to BMJ Open. The paper was subsequently accepted for publication at BMJ Open.

ARTICLE DETAILS

TITLE (PROVISIONAL)	AWARENESS AND CONTROL OF HYPERTENSION IN BANGLADESH–FOLLOW UP OF A HYPERTENSIVE COHORT
AUTHORS	Alam, Dewan; Chowdhury, Muhammad; Siddiquee, Ali; Ahmed, Shyfuddin; Niessen, Louis

VERSION 1 - REVIEW

REVIEWER	Joshua Barzilay Kaiser Permanente of Georgia USA
REVIEW RETURNED	22-Mar-2014

GENERAL COMMENTS	This paper suggests that a simple intervention helps control HTN in a "poor" country. One can argue the opposite too - that it did not have that much effect. I believe the authors would do well to expand their Discussuib section to state that repeated interventions may be more efficacious than a one time intervention. They may also wish to comment more broadly on concern for a subclinical disorder (HTN is without symptoms) versus the need to "survive" day in, day out in a poor country.

REVIEWER	Sohel Reza Choudhury National Heart Foundation Hospital & Research Institute Bangladesh
REVIEW RETURNED	30-Jun-2014

GENERAL COMMENTS	This is a longitudinal study where authors tested the hypothesis that awareness of hypertension and referral with some health promotion advice after detection through community screening would increase subsequent visit to health care provider and result in reduction in blood pressure levels. The study reported prevalence of hypertension and the awareness level from the baseline data which are comparable to the other studies done in Bangladesh. However follow-up data on urban rural difference in health seeking behavior, difference in mean blood pressure reduction by qualified and non qualified care providers added new important information. The manuscript is well written and authors described the methods

	clearly. Authors used two separate population one urban and one rural to test the hypothesis. These two population have very different characteristics especially in the rural population the proportion people in low income group was almost 70% while in urban area this was only 31%. Therefore the different types of health seeking behavior between urban and rural population in terms of visiting different types of health care providers might be due to difference in economic status. Increase use of B blockers in rural population might be due to the fact that this drug is cheaper. Authors may analyze the health seeking behavior and compare outcome by socio economic strata. Authors may do some further analysis and add a table or a figure showing the different outcome according to economic strata in both population. Authors also need to state the prevalence of different stages of hypertension at base line and percent attained target blood pressure in different stages of hypertension. Authors did not reported the compliance to the advice or drug given by the health care providers, which would be very much informative. Authors should also report whether the referred cases attended government or private health care facilities if this information available. It is interesting to note that although at screening identified hypertensive cases were advised to go to qualified physician, many of them especially in rural area went to non qualified care providers. Author should comment on the probable causes for this finding at discussion section. High use of B-blockers by hypertensive attending village drug sellers was found, however in urban area people attending drug sellers had b blocker use rate similar to that of people attending professionals. Therefore, knowledge gap may not be only reason for high use of B blocker in rural area, as authors suggested. Authors suggested for training of drug sellers as many people especially in rural area attend them. However data suggested that reduction of blood pressure attending drug sellers was lower than those who attended physicians. Therefore, making drugs available at government primary health care service and attracting people to primary health care system and training qualified and semi qualified health care providers may be another option to address the hypertension control in resource poor setting instead of devising a program for drug sellers who are actually out side the government health care system. Authors may clarify their views on this issue.

VERSION 1 – AUTHOR RESPONSE

Reviewer 1: Comment to Author:

* Comment: This paper suggests that a simple intervention helps control HTN in a "poor" country. One can argue the opposite too - that it did not have that much effect.

I believe the authors would do well to expand their Discussion section to state that repeated interventions may be more efficacious than a onetime intervention. They may also wish to comment more broadly on concern for a subclinical disorder (HTN is without symptoms) versus the need to "survive" day in, day out in a poor country.

Response: We thank you for your valuable comments. We tried to expand our discussion in light of your observations and comments (Page 12, 14). We have plan for longitudinal assessment (on-going) of effect of repeated interventions. We admit that the effect was quite modest but in a community with

high unawareness, such effect may result in overall health benefits by potentially reducing the risk of myocardial infarction or stroke assuming that awareness and health messages result in preventive action in most hypertensive patients.

The concern regarding hypertension as a subclinical disorder versus fight for survival in day to day life in a poor country is very genuine and also a difficult dilemma. Hypertension is generally a lifelong condition but putting on lifelong treatment in those poor settings is challenging. We are conducting a subsequent mix method study to look deeper into the health seeking behavior and health system response to these hypertensive patients. We agree that hypertensive patients may not feel the urgency of treating such disease as it is asymptomatic but the main concern is possible end organ damage which occurs silently in hypertensive patients and only present with acute myocardial infarction, stroke or kidney failure at the end. The main purpose of hypertension treatment is to prevent or minimize such events.

Reviewer 2: Comment to Author:

* Comments: This is a longitudinal study where authors tested the hypothesis that awareness of hypertension and referral with some health promotion advice after detection through community screening would increase subsequent visit to health care provider and result in reduction in blood pressure levels.

Response: Thank you for your valuable comments.

* Comments: The study reported prevalence of hypertension and the awareness level from the baseline data which are comparable to the other studies done in Bangladesh. However follow-up data on urban rural difference in health seeking behavior, difference in mean blood pressure reduction by qualified and non qualified care providers added new important information. The manuscript is well written and authors described the methods clearly.

Response: Thank you for your kind appreciation.

* Comment: Authors used two separate population one urban and one rural to test the hypothesis. These two population have very different characteristics especially in the rural population the proportion people in low income group was almost 70% while in urban area this was only 31%. Therefore the different types of health seeking behavior between urban and rural population in terms of visiting different types of health care providers might be due to difference in economic status. Increase use of B blockers in rural population might be due to the fact that this drug is cheaper. Authors may analyze the health seeking behavior and compare outcome by socio economic strata. Authors may do some further analysis and add a table or a figure showing the different outcome according to economic strata in both population.

Response: Thank you very much for your valuable comments. We incorporated income group in figure 3A (Page 25) to demonstrate provider visit by area and economic strata. We also changed figure 2 (Page 24) to demonstrate blood pressure control status in urban and rural population. We are conducting a subsequent mix method study to look deeper into the health seeking behavior and health system response to these hypertensive patients that we have identified both in urban and rural communities. That study findings are expected to address these important queries in details.

* Comments: Authors also need to state the prevalence of different stages of hypertension at base line and percent attained target blood pressure in different stages of hypertension. Authors did not report the compliance to the advice or drug given by the health care providers, which would be very much informative. Authors should also report whether the referred cases attended government or private health care facilities if this information available. It is interesting to note that although at screening identified hypertensive cases were advised to go to qualified physician, many of them especially in rural area went to non qualified care providers. Author should comment on the probable causes for this finding at discussion section.

Response: We thank you again for the valuable comments. Prevalence of different stages of hypertension and target achievement by stage of hypertension has been included in result section (Page 8 & Page 10). We have inserted comments on high drug seller visit in rural area (Page 11). Compliance to prescribed medication and provider type (public or private) was beyond the scope of this study. We focused on the awareness and control status in this paper and avoided much detail on prevalence as national representative data are already available.

* Comments: High use of B-blockers by hypertensive attending village drug sellers was found, however in urban area people attending drug sellers had b blocker use rate similar to that of people attending professionals. Therefore, knowledge gap may not be only reason for high use of B blocker in rural area, as authors suggested. Authors suggested for training of drug sellers as many people especially in rural area attend them. However data suggested that reduction of blood pressure attending drug sellers was lower than those who attended physicians. Therefore, making drugs available at government primary health care service and attracting people to primary health care system and training qualified and semi qualified health care providers may be another option to address the hypertension control in resource poor setting instead of devising a program for drug sellers who are actually outside the government health care system. Authors may clarify their views on this issue.

Response: We reconsidered our interpretation and rephrased both abstract (Page 2) and conclusion (Page 15) in light of your observations. We agree that strengthening and equipping primary health care properly might ameliorate the problem of hypertension in Bangladesh and included in our discussion (Page 13).

VERSION 2 – REVIEW

REVIEWER	Sohel Reza Choudhury National Heart Foundation Hospital & Research Institute. Bangladesh
REVIEW RETURNED	17-Sep-2014

- The reviewer completed the checklist but made no further comments