

Project No.: 5JC/2004/report

Restricted Circulation

**End of Project Evaluation Report
Heartfile JC project**

*This report is being sent in conjunction with 8 **Progress and Activity Reports**, which have been sent to the TVO project office as per the schedules outlined in Appendix A.*

Prevention of cardiovascular diseases in the Districts of Jhelum and Chakwal, Pakistan
2004

A TVO / EC funded project

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1. Background

Cardiovascular diseases accounting for more than 30% of all deaths world wide have emerged as the major public health challenge of our times, both in developing as well as developed countries.

The disease burden of cardiovascular diseases includes high blood pressure, coronary heart disease and stroke. Fortunately the preventive strategies of all these diseases are similar and center on the promotion of healthy lifestyles including a healthy diet, physical activity, avoidance of tobacco and screening for high blood pressure.

In Pakistan there are serious gaps in the prevention and control of cardiovascular diseases; for example, amongst the 12 million individuals with high blood pressure in the country, less than 3% are controlled, which is the lowest control rate in the world and reflects a serious gap on part of the health care providers to recognize and treat it on one hand and on the other, reflects unawareness and lack of access to care on part of the health care providers.

Heartfile aimed to develop a model demonstration project through which a resource sensitive approach could be developed for addressing this issue in Pakistan. This issue was addressed in the Districts of *Jhelum* and *Chakwal* through the TVO/EC funded 'Heartfile JC project'. The project involved drawing together health care providers and the communities into the loop to step up awareness of the cardiovascular disease issue and the modes of their prevention through workshops for health care providers and school health campaigns for the community members.

2 Heartfile JC PROJECT – Brief overview of the project

The "Heartfile JC Project" was launched in the Districts of Jhelum and Chakwal – the project focused on stepping up opportunistic population screening of high blood pressure as an entry point to the prevention and control of cardiovascular diseases. Training of health service providers was therefore a key element of this project; in addition a school health component was also packaged alongside to promote healthier habits amongst children in the districts.

2.1 Health Service Provider Training

This component focused on training health professionals who provide health care at the grass roots level. These included locally practicing physicians, Lady Health Visitors and male paramedics, who represent the underprivileged health service providers that do not benefit from academic opportunities available in larger towns. Health providers were trained in opportunistic blood pressure screening and other aspects of prevention encompassing lifestyle modifications. Short, half-day courses on the issues involved and the practical steps providers could take were offered to health service providers. Project staff and prominent members of the medical establishment conducted the training with quality mechanisms built into the process. However following training, each provider needs to receive a signboard with the Heartfile logo. The public will be directed through the communications campaign to look for this logo to get a blood pressure check and good quality information on lifestyle changes for cardiovascular disease prevention and control. The following table gives an over view of the total number of health care providers trained.

Table 1. Inventory of health care providers trained to date

	physician health care providers – total number trained ¹	Non physician health care providers – total number trained²
1 Jhelum	50	119
2 Chakwal	50	261

2.2 Schools Programme

Fifty schools in each project area were initially inducted for the specially designed School Health Campaign (<http://heartfile.org/jc.htm>)³ which packages innovative tools of intervention. However subsequent to a mid term project appraisal project the total number of schools was decreased to 40. To date, 94 session have been conducted in 94 schools

3. Project evaluation

This project integrated sound evaluation strategies. Prior to the launch of this project, a baseline survey was conducted to assess the knowledge, practices and attitudes of both the communities and the health care providers so that the tools of the intervention can be developed and targeted appropriately. At the end of the project, a post evaluation intervention was conducted.

The surveys were conducted before and after the intervention.

1. Physician Interviews
2. Non Physician Health service provider Interviews
3. Exit interviews
4. Piloting survey

4. Study objectives

Evaluation of the Heartfile JC project was conducted in three settings to assess:

1. The impact of intervention on physician's knowledge and practices compared with baseline levels of knowledge and practices relating to cardiovascular disease prevention and opportunistic screening of high blood pressure.
2. To assess the impact of intervention on the knowledge level of non-physician health care providers compared with base line levels relating to cardiovascular disease prevention and opportunistic screening of high blood pressure
3. To assess the impact of intervention on community members visiting clinics with regard to perceptions relating to heart disease and practices relating to opportunistic blood pressure screening and practicing healthy life styles.

¹ A training of 50 physicians in Jhelum and 20 Physicians in Chakwal is scheduled for February 23 and 26 respectively; the total number trained would then be 170

² A training of 50 non physician health care providers in Jhelum is scheduled for February; the total number trained would then be 430

³ Details have been submitted earlier – in addition, samples of the tools of intervention have also been sent earlier.

5. Methods and protocols

Appendix B includes details on study design, study tools, study population, inclusion and exclusion criteria, sampling procedure, and sampling size

6. Statistical Analysis

Statistical analysis was conducted using SPSS version 11 for windows. Data was entered ensuring quality check after coding responses to variables. Data was subsequently cleaned. Variables were assessed on nominal, ordinal, binary and numeric scales. Pre-evaluation and post evaluation data entry was done in the same spread sheet. Variables that needed to be paired were pair coded. Preliminary analysis involved an analysis of frequencies. Numeric data was compared through comparison of means by the application of paired t test; p-values were given to compare the statistical difference between given frequencies before and after the intervention. Nominal, binary and ordinal data was compared through the application of the Wilcoxin test. P-values were ascertained to compare the statistical difference between given frequencies prior to and subsequent to the intervention.

7. Results

7.1 Non-physician health care providers: 50 health care providers were selected each in the districts of Jhelum and Chakwal through the random stratified sampling techniques. A total of hundred health care providers were thus included in the assessment prior to the intervention and another hundred were randomly selected to be included in the post intervention evaluation. There was no statistically significant difference observed between the male and female distribution of non-physician health care providers before and after the interview. 77% of the respondents prior to the interview in the pre-evaluation survey were male as opposed to 93.8% male respondents in the post intervention survey. Differences were observed in the age distribution of the study participants enrolled in the pre-evaluation compared with those in the post evaluation survey. Mean age was 41.12 in the pre-evaluation sample whereas the mean age of the post intervention sample was 29.76 years; the difference was found to be statistically significant (p-value 0.021). Differences were also observed between the mean number of patients with cardiovascular events that non physician health care providers saw in the pre intervention and post intervention scenarios. The mean number of cases seen per week by non physicians in the pre-evaluation sample were 14.23 whereas, the number of cases seen in the post evaluation sample was 21.98; the difference was statistically significant (p-value 0.012).

Statistically significant differences were observed in the practices of non-physician health care providers with regard to the measurement of blood pressure on the first visit. Prior to the intervention, 90% of the health care providers reported to have been measuring blood pressure on the patients' first visit; compared with this, 100% of the non-health care providers were measuring blood pressure in the post intervention survey. The difference was found to be statistically significant (p-value < 0.001). A statistically significant difference (p value <0.001) was also observed in the pattern of measurement of blood pressure on patients' follow up visits prior to and subsequent to the intervention. Prior to the intervention, 63.3% of the non-physician health care providers were measuring blood pressure on each visit whereas this proportion increased to 100% subsequent to intervention. There were also significantly positive differences observed for practices related to dietary advice that was given to patient by the non-physician health care providers. The proportion of health care providers who "always" gave dietary advice to their patients increased from 41.4% in the baseline survey to 74% in the post intervention

survey, whereas, the proportion of health care providers who gave dietary advice “sometimes” fell from 58% in the base-line survey to 25% in the post intervention survey. Similarly a statistically significant difference was also observed in the practices relating to the advice that non physicians gave to their patients with regard to physical activity. Trends increased from 29% in the baseline to 50.5% in the post intervention evaluations with regard to health care provider’s practice on “always” giving advice whereas trends fell from 51% in the baseline survey to 46.4% in the post intervention survey with regard to health care providers who only gave advice to the patients “sometimes”. Results were found to be statistically significant (p-value 0.05). However statistically significant result was not observed for change in practices relating to measurement of waist/hip ratio. Prior to the intervention, only 6% healthcare providers practiced measuring waist hip ratio whereas this ratio increased only up to 10% in the post intervention survey; the result was not statistically significant (p-value 0.285). However only a marginally significant trend was also observed with regard to advice relating to tobacco cessation. Proportion of healthcare providers increased from 52% to 53.6% with regard to healthcare providers who “always” gave advice to their patients on the subject. The trend was marginally significant (p-value=0.05). The intervention produced a significant impact on non physician health care practices relating to patient referral for high blood pressure. 71% of healthcare providers prior to the intervention referred their patients for high blood pressure management whereas this trend increased to 82.5% subsequent to the intervention. However, this result was not found to be statistically significant (p-value 0.46).

Results of the pre and post intervention evaluation and a comparative analysis of these assessments revealed that our intervention was successful in significantly impacting the practices of healthcare providers with regard to blood pressure on the patient’s first visit and measurement of at each subsequent visit. The intervention was also statistically significant in up scaling practices of healthcare providers with regard to dietary advice and advice on physical activity to patients. This intervention also produced statistically significant results with regard to the impact it had on healthcare providers to refer their patients for further management of blood pressure to physicians. However the impact of this intervention on encouraging non physician health care providers to step up their practices with regard to tobacco counseling was marginal and unequivocal. This can be explained on the basis of previous interventions which had already primed healthcare providers to this approach. Baseline evaluation had indicated that 52% of the healthcare providers had previously been giving advice for tobacco cessation on every visit and therefore there was not much room for improvement on this trend. Results of our intervention revealed statistically insignificant results with regard to impact on practices that related to measurement of waist hip ratio. This was expected since measurement of the waist hip ratio involves the use of tools which may not be readily available in healthcare practices and also involves a certain amount of time in measuring the waist and hip and calculating the ratio; specifically with regard to the females, the approach was not found to be culturally acceptable and therefore the results that we got in this category were expected. By and large the results were encouraging and promising.

7.2 Evaluation of the intervention targeted at physicians: 50 physicians were randomly selected each in the districts of Jhelum and Chakwal through the stratified sampling techniques. A total of 100 physicians were therefore randomly interviewed prior to and another 61 after the intervention to assess the impact of the intervention. There were no statistically significant differences observed in physicians male: female ratio in the samples of physicians interviewed before and after the intervention (p value: 0.44). 88.3% of the study population was male in the pre-evaluation survey whereas in the post evaluation survey 90.2% of the respondents were

male. There were also no differences observed in the age distribution of the study participants; mean age was 40.32 in the pre-evaluation sample whereas the mean age of the post intervention sample was 42.13 years; the difference is not found to be statistically significant (p-value 0.36). The samples were also matched with regard to the patient turn over. The mean number of cases seen per week by physicians in the pre-evaluation sample were 253 whereas the number of cases seen in the post evaluation sample was 324; the difference was not statistically significant (p-value 0.32); similarly, a mean of 25.82 cases of CVD were seen per week in the pre-evaluation sample whereas a mean number of 40.25 were seen in the post evaluation sample. The difference was not found to be statistically significant (p-value 0.06).

80.2 % of the study participants measured blood pressure of their patients on the first visit; this increased to 92% subsequent to the intervention; the result was found to be statistically significant (p-value 0.05). 76.3% of the study participants measured blood pressure of their patients on every follow up visit prior to the intervention; this increased to 92% subsequent to the intervention. The result was found to be statistically significant (p-value=0.05).

A statistically significant difference was also observed in knowledge levels relating to the ideal the cut-off point for initiating therapy. 18% of the study participants gave a correct answer prior to the intervention; this increased to 27% after the intervention. The difference was found to be statistically significant (p-value=0.05). Similarly a statistically significant difference was also observed with regard to the changes in the knowledge level relating to the ideal first line blood pressure lowering drug; a correct answer was not given by any participant prior to the intervention whereas a correct answer was given by 8.3% of the participants subsequent to the intervention. An answer characterized as “somewhat” correct was given by 75.5% prior to the intervention whereas this increase to 83.3 % subsequent to the intervention. In this category, a wrong answer was given by 19.1% prior to the intervention; this fell down to 6.7% subsequent to the intervention. The result was also found to be statistically significant (p-value 0.01). However a statistically significant difference was not observed in relation to change in knowledge level relating to the ideal blood pressure lowering drug in diabetics. Prior to the intervention, 50.3% of the respondents gave a correct answer; this increased only to 56.4% subsequent to the intervention. The result was not found to be statistically significant (p-value 0.147). None of the respondents gave a correct answer to the question structured to get a response on the guidelines physicians were using for managing high blood pressure prior to the intervention; however 21% of the respondents gave a correct answer to this in the post evaluation survey; the difference was found to be statistically significant (p-value 0.05). 81% of the physicians reported to have been “always” giving dietary advice to their patients prior to the intervention. This increased to 93.4% subsequent to the intervention. The results were not statistically significant (p-value 0.17). However, the percentage of respondents who “always” gave advice for physical activity to their patients increased from 71.3% in the baseline to 83.3% after the intervention. The results were again not statistically significant (p-value 0.14). The percentage of physicians giving advice for tobacco increased from 76% in the base line to 83.3% in the post evaluation with insignificant results. 19% of the healthcare providers weighed all their patients prior to the intervention; this increased to 24.6% subsequent to the intervention. However the results were not found to be statistically significant.

The pre and post intervention samples were matched for age, sex, patient turn over and exposure to patients with cardiovascular diseases. The intervention produced statistically significant results with regard to knowledge levels relating to cut off points for blood pressure lowering, ideal blood pressure lowering drugs, and guidelines for the management of blood pressure.

Favorable effects were also observed on practices relating to opportunistic blood pressure screening, screening for blood pressure on patients subsequent visits and healthy lifestyle advice.

7.3 Community survey through “exit interviews”: a total of 100 community members were surveyed prior and another 100 subsequent to the intervention randomly. Sample selection technique has been elaborated upon in Appendix B. Males constituted 60% of the respondents in the pre-evaluation survey and 59.1% in the post evaluation survey. The difference was not found to be statistically significant (p-value 0.22). 64% of the participants reported having had an index cardiovascular event in the pre-evaluation survey whereas in the post evaluation survey, a lesser frequency of respondents had previously had index events. The difference was found to be statistically significant (p value= <0.001). For, 40.85% of the study participants in the pre-evaluation survey this was their first visit to the doctors whereas this increased to 79.5% in the post evaluation survey; the difference was found to be statistically significant (p value <0.001). Respondents indicated that in 68.3% of the cases, the doctor had checked their blood pressure in the baseline situation; this increased to 75% in the post evaluation survey. The difference was found to be statistically significant (p-value 0.003). 58% of the respondents in the pre-evaluation survey reported that doctors had given them advice about diet; this increased to 65% in the post evaluation survey. However this difference was not found to be statistically significant (p-value 0.77). 31.7% had received advice about tobacco cessation; this increased to 43% in the post intervention survey, with statistically insignificant results (p-value 0.28). However statistically significant differences were observed in the practices of doctors with regard to advice relating to passive smoking prior to intervention and subsequent to the intervention. Before the intervention, 10.8% physicians gave advice relating to passive smoking whereas, this increased to 36.4% in the post evaluation survey. The result was found to be statistically significant (p-value 0.04). Similarly statistically significant results were also observed relating to physical activity counseling. The percentage of doctors “always” giving advice for physical activity increased from 50% in the baseline scenario to 65.9% in the post intervention evaluation. The result was found to be statistically significant (p value <0.001).

8. Conclusions

The results of this intervention have yielded encouraging results. However a follow up action needs be set into place to strengthen the intervention. Based on the feedback gathered during the course of the one and a half year period, a follow up strategy is being proposed.

Health care providers have been trained in opportunistic screening of high blood pressure through this project in two districts. On the other hand, an electronic media intervention will soon be launched by Heartfile in collaboration with the Ministry of Health and WHO; the aim of this intervention will be to raise awareness amongst community members relating to the need to have their blood pressures checked at every health care encounter. This is therefore the ideal opportunity to link the two interventions in the districts of Jhelum and Chakwal. Linkage is envisaged through the incorporation of social marketing techniques. This involves the deployment of signage. Health care providers who have been trained need to receive a signboard with the Heartfile logo with the inscription in Urdu “have you had your blood pressure checked”. The public will be directed through the communications campaign to look for this logo to get a blood pressure check and good quality information on lifestyle changes for cardiovascular disease prevention and control.

This intervention will allow the comparison of a combination strategy (where health care provider training is combined with the media communication campaigns as has been done in Jhelum and Chakwal) with the use of the communication campaign alone (which will be adopted for the rest of the country, given that the media intervention will have a country wide impact). Lessons learnt from evaluating this experience will therefore have implications for evaluating the impact of strategies ‘combination’ *vis a vis* ‘communication alone’ in structuring the reorientation of health services dimension as part of the long term strategic plan of the action for future investments in NCDs <http://Heartfile.org/nap.htm> – a collaborative initiative of WHO, Heartfile and Ministry of Health which Heartfile is spearheading.

In order to achieve this, 6 month continuation of the project is necessitated with funding components requested which will enable the deployment of signboards, development of tools used in the reinforcement of messages and training activities.

Table 2. Non physician health care providers: pre and post intervention data

Variables	Pre evaluation % (n)	Post Evaluation % (n)	p-value
Sex			< 0.001
Male	77% (77)	6.2% (6)	
Female	23% (23)	93.8% (91)	
Site of study			1.00
Jehlum	50% (50)	50.5% (49)	
Chakwal	50% (50)	49.5% (48)	
Measure BP on first visit			< 0.001
Yes	90% (90)	100% (97)	
No	10% (10)		
Measure BP on each visit			< 0.001
Yes	63.6% (64)	100% (97)	
No	36.4% (36)		
Dietary advice to every patient			< 0.001
Always	41.4% (41)	74% (74)	
Never	1% (1)	1% (1)	
Sometimes	58% (58)	25% (25)	
Measure waist hip			0.28
Yes	6% (6)	10.3% (10)	
No	94% (94)	89.7% (87)	
Advice on physical activity			0.05
Always	29% (29)	50.5% (49)	
Never	20% (20)	3.1% (3)	
Sometimes	51% (51)	46.4% (45)	
Type of practice			0.001
Public sector	11% (11)	62.9% (61)	
Private sector	77% (77)	7.2% (7)	
Both	12% (12)	29.9% (29)	
Refer patient to physicians care			0.46
Yes	71% (71)	82.5% (80)	
No	29% (29)	3.1% (3)	
Both		14.4% (14)	
Tobacco cessation advice given			0.05
Always	52% (52)	53.6% (52)	
Sometimes	36% (36)	11.3% (11)	
Never	12% (12)	35.1% (34)	
Ideal BP			0.23
Correct answer	47% (47)	49% (47)	
Incorrect answer	53% (53)	51% (50)	
Weigh every patient			0.13
Yes	19% (19)	27.8% (27)	
No	81% (81)	72.2% (70)	
	Mean (SD)	Mean (SD)	
Age of respondents	41.12 (12.55)	29.76 (7.92)	0.012
No of CVD cases	14.23 (11.78)	21.98 (26.75)	0.012

Table 3. Physician health care providers: pre and post intervention data

	Pre evaluation % (n)	Post evaluation % (n)	p value
Sex			0.44
Male	88.3% (83)	90.2% (55)	
Female	11.7% (11)	9.8% (6)	
Sit of study			< 0.001
Jehlum	52.1% (49)	50.8% (31)	
Chakwal	47.9% (45)	49.2% (30)	
Guidelines mentioned			0.05
Yes		21% (13)	
No	100% (94)	79% (48)	
Measure BP of every patient			0.05
Yes	76.3% (71)	92% (50)	
No	23.7% (22)	18% (11)	
Measure BP on first visit			0.05
yes	88.2% (82)	92% (50)	
No	11.8% (12)	18% (11)	
Ideal BP for staring therapy			0.05
Correct answer	18.7% (17)	27% (16)	
Incorrect answer	81.3% (74)	73. % (45)	
Ideal first line drug for BP			0.01
Correct answer		8.3% (5)	
Intermediate answer	75.5% (71)	83.3% (50)	
Wrong answer	19.1% (18)	6.7% (4)	
Not mentioned	5.3% (5)	1.7% (1)	
Ideal BP drug for diabetics			0.15
Correct answer	50.3% (50)	56.4% (34)	
Incorrect answer	33% (33)	38 % (23)	
Not mentioned	16.7% (17)	5.6% (4)	
Advice for diet			0.17
Always	81.1% (81)	93.4% (57)	
Never	5% (5)		
Sometimes	14.9% (14)	6.6% (4)	
Advice for physical activity			0.14
Always	71.3% (67)	83.3% (50)	
Never		1.7% (1)	
Sometimes	28.7% (27)	15% (9)	
Advice regarding tobacco			0.89
Always	76.6% (72)	83% (49)	
Never	3.2% (3)	3.3% (2)	
Sometimes	20.2% (19)	16.4% (10)	
Measure waist hip of all pts			1.00
Yes			
No	100%(94)	100%(61)	
Weigh all pts			0.37
Yes	19.1%(18)	24.6%(15)	
No	80.9%(76)	75.4%(46)	
Type of practice			0.005
Govt	18.3%(17)	9.8%(6)	
Private	62.4%(58)	54.1%(33)	
both	17.2%(16)	36.1%(22)	
	Mean (SD)	Mean (SD)	
Age	40.32(13.21)	42.13(8.41)	0.36
No of cases seen per week	253.68(185.27)	324.20(436.04)	0.32
No of CVD cases seen/week	25.82(31.59)	40.25(43.95)	0.06

Table 4. Community exit interviews: pre and post intervention data

	Pre evaluation % (n)	Post evaluation % (n)	p - value
Sex			0.22
Male	60% (72)	59.1% (26)	
Female	40% (48)	40.9% (18)	
Purpose of visit			< 0.001
Cardiovascular	64.7% (77)	40.9% (18)	
Non-cardiovascular	35.3% (42)	59.1% (26)	
First visit to doctor			< 0.001
Yes	40.85 (49)	79.5% (35)	
No	59.2% (71)	20.5% (9)	
Was BP checked?			0.003
Yes	68.3 (82)	75% (33)	
No	31.7 (38)	25% (11)	
Was dietary advice given?			0.77
Yes	58.3% (70)	65.9% (29)	
No	41.7% (50)	34.1% (15)	
Was advice about tobacco cessation given?			0.28
Yes	21.7% (26)	43% (19)	
No	78.3% (94)	56.8 (25)	
Was advice about passive smoking given?			0.04
Yes	10.8% (13)	36.4% (16)	
No	89.2% (107)	63.6% (28)	
Was advice about physical activity given?			< 0.001
Yes	50% (60)	65.9% (29)	
No	50% (60)	34.1% (15)	

APPENDIX A

Appendix A

HEARTFILE JC Project Monthly Reports – sent to TVO office

Report sent	Month	Activities
January 7, 2004	October November December, 2003	1. School health sessions (19) 2. Physicians workshops (1) 3. Non-physicians workshop (2)
October 8, 2003	August September, 2003	1. School Health Sessions (7) 2. Physicians workshop (1) 3. Non-physicians workshop (1)
August 6, 2003	May June July, 2003	1. School Health Sessions (7) 2. Physicians workshop (1) 3. Non-physicians workshop (1)
May28, 2003	February March April	1. School Health Sessions (11) 2. Physicians workshop (1) 3. Non-physicians workshop (2)
February4, 2003	December2002 January2003	1. Non-pyhsicians workshop (1) 2. School health tools of intervention ready 3. Instruction manual for school health prepared 4. In house training workshop for master trainers 5. Meetings with education department of Jhelum and Chakwal
December 18, 2002	November 2002	1. Stake holders orientation meeting, distt Jhelum 2. Physicians and Non-physicians pre-evaluation survey
November 21,2002	September October, 2002	1. Pre-evaluation surveys protocol 2. Pre-evaluation survey camp, Jhelum 3. Physicians, non-physicians survey 4. Contract with Future Group Europe 5. Meetings with Future group Europe 6. Non-physicians workshop material 7. Physicians workshop material 8. Printing of project introductory brochure 9. Stake-holders orientation meeting, Chakwal 10. Appointment of field coordinator, Jhelum Appointment of field coordinator, Chakwal
September10, 2002	August, 2002	1. Planning meeting

		<ol style="list-style-type: none">2. Invitation letters to focal points, Jhelum and Chakwal3. MoU signed in Chakwal4. MoU signed in Jhelum5. Hiring of field coordinators6. In house training workshop for the project staff.
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APPENDIX B

Project No.: 4JC/2002/Instm1Survey

Restricted Circulation

Pre and Post-evaluation Surveys Study Protocol and Methods

Prevention of cardiovascular diseases in the Districts of Jhelum and Chakwal, Pakistan
Heartfile 2002

A TVO / EC funded project
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Heartfile, The National Heart Foundation of Pakistan
Funding: Trust for Voluntary Organizations

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⁴ Questions 8-12 open ended responses.

BACKGROUND AND JUSTIFICATION OF THE PRE-EVALUATION SURVEYS:

Cardiovascular diseases accounting for more than 30% of all deaths world wide have emerged as the major public health challenge of our times, both in developing as well as developed countries.

The disease burden of cardiovascular diseases includes high blood pressure, coronary heart disease and stroke. Fortunately the preventive strategies of all these diseases are similar and center on the promotion of healthy lifestyles including a healthy diet, physical activity, avoidance of tobacco and screening for high blood pressure.

In Pakistan there are serious gaps in the prevention and control of cardiovascular diseases; for example, amongst the 12 million individuals with high blood pressure in the country, less than 3% are controlled, which is the lowest control rate in the world and reflects a serious gap on part of the health care providers to recognize and treat it on one hand and on the other, reflects unawareness and lack of access to care on part of the health care providers.

Heartfile aimed to develop a model demonstration project through which a resource sensitive approach could be developed for addressing this issue in Pakistan. This issue was addressed in the Districts of Jhelum and Chakwal through the TVO/EC funded 'Heartfile JC project'. The project involved drawing together health care providers and the communities into the loop to step up awareness of the cardiovascular disease issue and the modes of their prevention through workshops for health care providers and school health campaigns for the community members. This project integrated sound evaluation strategies. Prior to the launch of this project, a baseline survey was conducted to assess the knowledge, practices and attitudes of both the communities and the health care providers so that the tools of the intervention can be developed and targeted appropriately. At the end of the project, a post evaluation intervention was conducted.

The surveys were conducted before and after the intervention.

5. Physician Interviews
6. Non Physician Health service provider Interviews
7. Exit interviews
8. Piloting survey

PHYSICIAN INTERVIEWS

A baseline survey was conducted to enable an assessment of knowledge levels in order to facilitate the development of a training module for physicians. Protocols for the prevention and management of cardiovascular disease in Pakistan needed to be developed; in this project protocols for prevention and risk assessment of cardiovascular disease in general and the management of high blood pressure in particular were developed in collaboration with the World Health Organization, Department of Cardiovascular Diseases and Futures Group Europe. Such protocols, on one hand, were in line with the evidence based international recommendations but also reflected local circumstances and took into account cost effectiveness of therapeutic strategies. A base line level of understanding of the physician's knowledge, perception and practices was sought; this was critical to the development of the modules.

OBJECTIVE

1. To evaluate the current knowledge level of physicians about prevention and management of cardiovascular diseases.
2. To assess the level of knowledge regarding currently available standard protocols for the management of hypertension.
3. To assess practices relating opportunistic screening of high blood pressure.

STUDY DESIGN

Cross sectional survey in the districts of Jhelum and Chakwal.

STUDY TOOL

Structured questionnaire for the physicians as a tool to study their prescription pattern trends

STUDY POPULATION

Public and private physicians in the districts of Jhelum and Chakwal.

INCLUSION CRITERIA

Qualified physician with the degree of MBBS registered by Pakistan Medical and Dental Council, using a sphygmomanometer in their practice and prescribing medication for hypertension.

EXCLUSION CRITERIA

Refusal on the part of physician to participate in the study.
Any physician who has already been recruited.

SAMPLING PROCEDURE

Stratification Random

SAMPLE SIZE

Assuming that 50% of physicians are writing the prescription according to standard protocol, keeping the precision of the study at 95% and confidence interval with 5% margin of error.

SAMPLING

The sample will be randomly drawn from the districts of Jhelum and Chakwal from the lists of doctors maintained at the Heartfile office in the respective districts. On the list of each office, every 2nd doctor will be approached to fill out the study questionnaire; in case of ineligibility or refusal the next physician will be contacted; in this manner, each site will conduct a total of 50 interviews. For each health service provider contacted fill out the details and give numbers on the health service provider screening out log form. Appendix A. For those consenting to participate administer the questionnaire. Appendix B.

Physicians	Jhelum	Chakwal
Private sector	25	25
Public sector	25	25
Total	50	50

DISCLOSURE STATEMENT:

Project introductory leaflet should be given out and it should be explained that this is intended to ascertain practices of the physicians so that a suitable curriculum can be developed. Please clarify that this is in no way meant to assess individual practices and that the information is going to be confidential. Please let them know that names are not to be mentioned.

NON PHYSICIAN HEALTH SERVICE PROVIDERS INTERVIEW

Non physician health service providers can play a crucial role in the prevention of cardiovascular diseases by stepping up awareness about the lifestyles changes that prevent high blood pressure and by screening for high blood pressure and referring those with high blood pressure for further care. It is therefore essential to make them aware of these strategies but prior to that it is essential to evaluate their current practices so that appropriate training curricula can be developed.

OBJECTIVE:

1. To evaluate the current knowledge level of non-physicians health service providers about the prevention of cardiovascular diseases.
2. To assess practices relating to opportunistic screening of high blood pressure.

STUDY DESIGN

Cross sectional survey in the districts of Jhelum and Chakwal.

STUDY TOOL

Structured questionnaire for non-physician health care providers as a tool to study their prescription pattern trends.

STUDY POPULATION

Public and private sector non physician health care providers in the district of Jhelum and Chakwal.

INCLUSION CRITERIA

Non-physician health care provider who have been trained and are certified in blood pressure measurement.

EXCLUSION CRITERIA

1. Refusal on the part of non-physician health care provider to participate in the study
2. Any Non-physician who has already been recruited
3. Hakims
4. Homeopaths
5. Lady Health Workers

SAMPLING PROCEDURE

Stratified Random

SAMPLING:

A sample size of 100 has been calculated. The sample will be randomly drawn from the districts of Jhelum and Chakwal from the lists of non-physician health care providers maintained at the Heartfile office in the respective districts. On the list of each office, every 2nd provider will be approached to fill out the study questionnaire; in case of ineligibility or refusal the next non-physician will be contacted; in this manner, each site will conduct a total of 50 interviews. For each health service provider contacted fill out the details and give numbers on the health service provider screening out log form.

Appendix A. For those consenting to participate administer the questionnaire. Appendix C.

Non Physicians	Jhelum	Chakwal
Private sector	25	25
Public sector	25	25
Total	50	50

DISCLOSURE STATEMENT

Project introductory leaflet in urdu should be given out and it should be explained that this will be intended to ascertain practices of the providers so that a suitable curriculum can be developed. Please clarify that this is in no way meant to assess individual practices and that the information is going to be confidential. Please let them know that names are not to be mentioned.

EXIT INTERVIEWS

The information provided by the health service providers will be validated by interviews patients who have just had a consultation.

OBJECTIVE:

To validate the information provided by health service providers.

STUDY DESIGN:

Cross sectional survey

STUDY TOOLS:

Questionnaire

STUDY PARTICIPANTS AND INCLUSION CRITERIA:

People buying medicines at a chemist's shop who have been to a doctor for their own health related personal reasons within the last one week.

EXCLUSION CRITERIA:

1. Those that are buying medication for someone else
2. Uncooperative

SAMPLING:

Randomly select 10 chemists shops, half in the vicinity of hospitals, a quarter in the vicinity of doctors clinics and another half in the vicinity of non-physician health care providers working sites in both rural and urban areas. Randomly select 5 individuals that come to buy medication, exclude the ones that do not meet the inclusion criteria till the desired number is attained from each facility. Note down details of all those contacted on the Exit interview log form, Appendix D, and administer the questionnaire on those that consent to participate. Appendix E.

DISCLOSURE:

Urdu pamphlet and oral description of the project, say that we wish to ask people how doctors treat them.

APPENDIX A

HEALTH SERVICE PROVIDER INTERVIEW LOG FORMS

Designation _____ Qualification _____ Enrolled _____ ID No. _____ Refused _____ (Reason for refusal) Uncooperative _____ No time _____ Other _____	Designation _____ Qualification _____ Enrolled _____ ID No. _____ Refused _____ (Reason for refusal) Uncooperative _____ No time _____ Other _____	Designation _____ Qualification _____ Enrolled _____ ID No. _____ Refused _____ (Reason for refusal) Uncooperative _____ No time _____ Other _____
Designation _____ Qualification _____ Enrolled _____ ID No. _____ Refused _____ (Reason for refusal) Uncooperative _____ No time _____ Other _____	Designation _____ Qualification _____ Enrolled _____ ID No. _____ Refused _____ (Reason for refusal) Uncooperative _____ No time _____ Other _____	Designation _____ Qualification _____ Enrolled _____ ID No. _____ Refused _____ (Reason for refusal) Uncooperative _____ No time _____ Other _____
Designation _____ Qualification _____ Enrolled _____ ID No. _____ Refused _____ (Reason for refusal) Uncooperative _____ No time _____ Other _____	Designation _____ Qualification _____ Enrolled _____ ID No. _____ Refused _____ (Reason for refusal) Uncooperative _____ No time _____ Other _____	Designation _____ Qualification _____ Enrolled _____ ID No. _____ Refused _____ (Reason for refusal) Uncooperative _____ No time _____ Other _____
Designation _____ Qualification _____ Enrolled _____ ID No. _____ Refused _____ (Reason for refusal) Uncooperative _____ No time _____ Other _____	Designation _____ Qualification _____ Enrolled _____ ID No. _____ Refused _____ (Reason for refusal) Uncooperative _____ No time _____ Other _____	Designation _____ Qualification _____ Enrolled _____ ID No. _____ Refused _____ (Reason for refusal) Uncooperative _____ No time _____ Other _____
Designation _____ Qualification _____ Enrolled _____ ID No. _____ Refused _____ (Reason for refusal) Uncooperative _____ No time _____ Other _____	Designation _____ Qualification _____ Enrolled _____ ID No. _____ Refused _____ (Reason for refusal) Uncooperative _____ No time _____ Other _____	Designation _____ Qualification _____ Enrolled _____ ID No. _____ Refused _____ (Reason for refusal) Uncooperative _____ No time _____ Other _____

APPENDIX B**QUESTIONNAIRE FOR DOCTOR⁵**

Jhelum / Chakwal (Mark As Appropriate)

Identification Number : _____

1. Age: _____ Years
2. Sex: Male _____ Female _____
3. No of all the cases seen _____ Per Week
4. Type of practice Govt. _____ Private: _____ Both: _____
5. Number of cases with cardiovascular diseases⁶ seen _____ Per week
(If none seen please exit the interview, even if more than 1 seen a week, continue)
6. Do you measure blood pressure of every patient Yes _____ No _____
7. Do you measure the blood pressure every patients on the first visit Yes _____ No _____
8. Which guidelines do you use for the management of high blood pressure

9. Which do you think is the ideal blood pressure for your middle aged male patient with ideal weight
_____ mmhg
10. Which do you think is the ideal blood pressure lowering medicine to use as first line

11. Which do you think is the ideal blood pressure lowering medication for diabetic patients

12. Do you give dietary advice to every patient
Yes _____ Always _____ No never _____ Sometimes _____
13. Do you give advice on physical activity to every patient
Yes _____ Always _____ No never _____ Sometimes _____
14. Do you give tobacco cessation advice to every patient
Yes _____ Always _____ No never _____ Sometimes _____
15. Do you weigh all your patients Yes _____ No _____
16. Do you measure waist hip of all your patients Yes _____ No _____

⁵ Questions 8-12 open ended responses.⁶ Cardiovascular diseases such as Stroke, heart attack, angina, high blood pressure, diabetes

APPENDIX C**QUESTIONNAIRE FOR NON-PHYSICIAN HEALTH CARE PROVIDERS**

Jhelum / Chakwal (Mark As Appropriate)

Identification Number : _____

1. Age: _____ Years
2. Sex: Male _____ Female _____
3. No of all the cases cardiovascular diseases⁷ seen _____ Per Week
4. Type of practice Govt. _____ Private: _____ Both: _____
(If none seen please exit the interview, even if more than 1 seen a week, continue)
5. Do you measure blood pressure of every patient Yes _____ No _____
6. Do you measure the blood pressure every patients on the first visit Yes _____ No _____
7. Which do you think is the ideal blood pressure for your middle aged male patient with ideal weight
_____ mmhg
8. Do you give dietary advice to every patient
Yes _____ Always _____ No never _____ Sometimes _____
9. Do you give advice on physical activity to every patient
Yes _____ Always _____ No never _____ Sometimes _____
10. Do you give tobacco cessation advice to every patient
Yes _____ Always _____ No never _____ Sometimes _____
11. Do you weigh all your patients Yes _____ No _____
12. Do you measure waist hip of all your patients Yes _____ No _____
13. Do you refer patients with high blood pressure or treat them yourself
Refer _____ Treat self _____

⁷ Cardiovascular diseases such as Stroke, heart attack, angina, high blood pressure, diabetes

APPENDIX E**EXIT INTERVIEW**

Jhelum / Chakwal (Mark As Appropriate)

Identification Number : _____

1. Age: _____ Years
2. Sex: Male _____ Female _____
3. Purpose of visiting the doctor. _____ Disease
4. First visit to *that* doctor Yes _____ No _____
5. Did the doctor check your blood pressure Yes _____ No _____
6. Did your doctor talk to you about diet Yes _____ No _____
If yes what was the advice _____
7. Did the doctor tell you about tobacco cessation Yes _____ No _____
8. Did the doctor tell you about passive smoking cessation Yes _____ No _____
9. Did the doctor tell you about physical activity Yes _____ No _____

APPENDIX H

PILOTING FORM

Category: _____

Name: _____

Age: _____ Years

Facility: _____

What are your observations about this curriculum that need to be improved?

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____

