Integrating World Health Organization package of Essential Non-communicable Disease interventions at primary health care level in India- an impact evaluation study

Poster number

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The assessment of the 10-year CVD risk among participants showed a positive shift towards lower-risk categories, underscoring the potential of lifestyle interventions in mitigating long-term cardiovascular risks.

BACKGROUND

Research Question

What is the impact of implementing /adapting the components of WHO PEN protocol to improve clinical outcomes of selected NCDs at the level of primary care in Himachal Pradesh, India?

- A minimum set of interventions is defined in the WHO PEN interventions, can be delivered by primary care physicians and Non-physician health workers in primary care.
- WHO-PEN protocols were used for the study.
- **Protocol 1** is "Prevention of heart attacks, strokes & Kidney disease through integrated management of diabetes mellitus and hypertension".
- **Protocol 2** pertains to "Health Education & Counselling on Healthy Behaviours".
- Study conducted in selected districts of Himachal Pradesh to identify persons with NCDs (CVD, Chronic obstructive pulmonary disease, Diabetes mellitus) reporting to OPDs and provide them counseling and health education regarding healthy behaviors, adherence to prescribed medication and adequate follow-up as described in WHO-PEN interventions with introduction of Electronic Health Records for adequate follow-up so as to improve clinical outcomes.

METHODS (Single arm Intervention study: Pre-post study design)

Sample size is calculated assuming 10-year CVD risk is 13% at baseline and the intervention decreases the risk to 7.3% (in a study in Bhutan). At an alpha error level of 5% and 80% power, 962 participants are required for the study. Considering 20% loss to follow up by 3 follow up visits, total sample size required for this study will be 1154. A total 1204 participants were enrolled in this study.

- The intervention components included health education and counseling on behavioral risk factors. **Brief Interventions using '5 A strategy**'- Ask, Advise, Assess, Assist and Arrange and **'5R strategy'-**Relevance, Risks, Rewards, Roadblocks, Repetition had been used for **behavioral change counseling**.
- An **Electronic Health Record (EHR)** system was introduced in these selected health facilities. All patients were given reminders through telephones for treatment adherence and follow-up visits.
- **Follow-up** was done **at baseline, three months, six months, and 12 months from enrolment.**

Figure 1 : Flow of activities Single arm Interventional study (Pre-post study design)

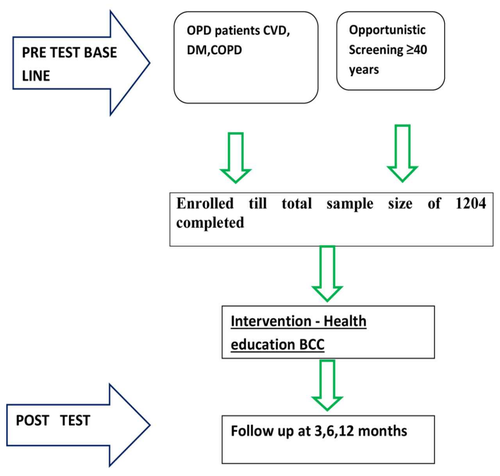
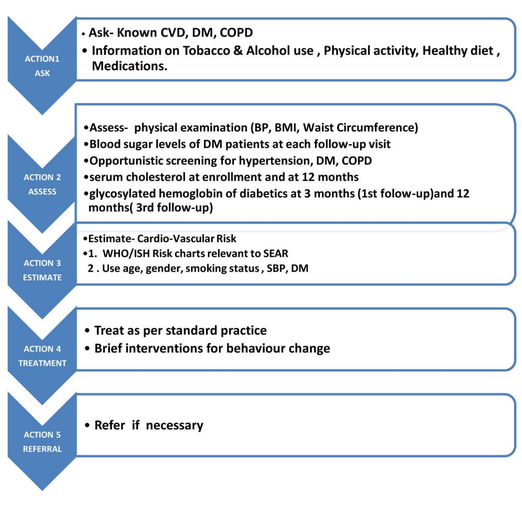


Figure 2: Action at each OPD visit

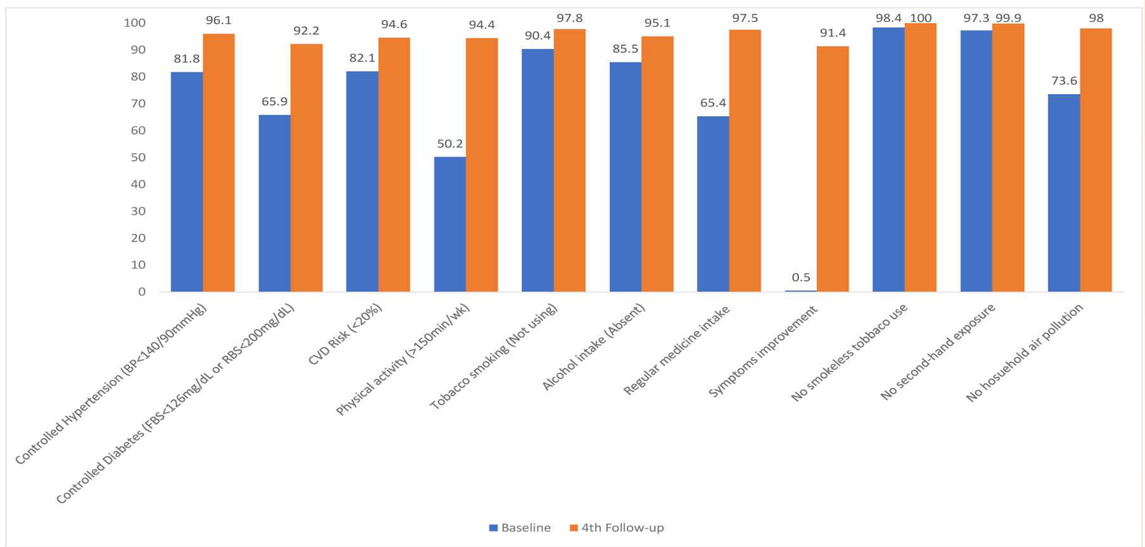


RESULTS

Table1: Comparison of various characteristics at baseline and at 4th follow-up visit

Parameter	Baseline (n=1204)	4th Follow-up (n=881)	RR (95%CI)	p-value
Controlled Hypertension (BP<140/90mmHg)	983 (81.8)	847 (96.1)	2.38 (1.23, 4.63)	**0.010**
Controlled Diabetes (FBS<126mg/dL or RBS<200mg/dL)	789 (65.9)	812 (92.2)	1.42 (0.90, 2.24)	**0.013**
CVD Risk (<20%)	986 (82.1)	833 (94.6)	3.88 (2.26, 6.66)	**<0.001**
Physical activity (>150min/wk)	603 (50.2)	832 (94.4)	1.08 (1.04, 1.11)	**<0.001**
Tobacco smoking (Not using)	1086 (90.4)	862 (97.8)	4.60 (2.45, 8.65)	**<0.001**
Alcohol intake (Absent)	1027 (85.5)	838 (95.1)	16.66 (8.61, 32.20)	**<0.001**
Regular medicine intake	785 (65.4)	859 (97.5)	2.50 (1.26, 4.96)	**0.008**
No exposure household air pollution	884 (73.6)	861 (98.0)	3.45 (2.62, 4.55)	**<0.001**
Restricted salt intake	975 (81.2)	873 (99.1)	1.07 (0.71, 1.59)	0.742
Restricted sugar intake	986 (82.1)	876 (99.4)	1.38 (0.67, 2.82)	0.300
Restricted fatty food intake	1075 (89.5)	873 (99.1)	1.03 (0.79, 1.34)	0.806

Figure 3: Comparison of various outcomes at baseline and follow-up(12 months)



CONCLUSIONS

The patients showed significant improvement in blood pressure, blood sugar control, and behavioral risk factors. **Their 10-year CVD risk ≥ 20% decreased significantly from 19% to 5.4%.**

Lost to follow up was maximum at a multispecialty referral hospital for patients from two Districts – District Kinnaur and District Shimla. This further reiterates the fact that the patients prefer visiting health facilities nearer to their homes.

- The findings from this study underscore the need for targeted health interventions and continuous support for lifestyle modifications at the individual level.
- The involvement of non-physician health workers in health education and counseling is effective in providing individualized counseling to the patient suffering from NCDs which in turn leads to adaption of healthy behaviours, achieving better hypertension and blood sugar controls and improvement in symptoms.
- Electronic Health records serve as important link for continuity of care and referral to super specialist care in case of need.

ADDITIONAL KEY INFORMATION

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