Effectiveness of district health promotion model (Hoshiarpur Ambala model): An implementation experience from two districts from Northern part of India

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ABSTRACT

Introduction: In India, implementation of Health Promotion activities follows a vertical approach at district level. A Health Promotion project was therefore implemented for 3 years in Hoshiarpur and Ambala districts of Northern India, with objectives to develop, implement, and assess the effectiveness of integrated health promotion model.

Materials and Methods: Situation analysis in two districts was followed by a state level stakeholders workshop in which detailed layout of model and a health promotion manual (Hindi, English, and Punjabi) was developed for capacity building of workforce. The effectiveness of model was assessed using mix of quantitative as well as qualitative methods.

Results: The key features of model included integration and convergence within National Health Programs, multitasking, multisectoral involvement, and community empowerment, using digital media and advocacy tools. The facility assessment survey revealed improvements in implementation of activities as per annual activity calendar of IEC/BCC activities, better display of IEC material, with improved reporting, monitoring, and supervision. At community level, the awareness levels of the community members regarding communicable/noncommunicable diseases and key Reproductive and Child Health issues improved significantly ($P < 0.05$). Similarly, the client exit survey showed that dissemination of health information by MO/ANM increased in 3 years from $8\%$ to $80\%$ and $7.3\%$ to $75\%$ in districts Hoshiarpur and Ambala, respectively ($P < 0.05$). In-depth interview with key stakeholders and focused group discussion with Village Health and Sanitation Committee/Village Level Core Committee has shown their active involvement and improvements in their functioning. Based on indicative costing, per capita costs of National Health Mission for IEC/BCC/Health promotion activities need to be increased from INR 0.7 (USD 0.01) to INR 4 (USD 0.06), which requires increase in budget allocation from 1% to minimum of 4%.

Conclusion: Model was found to be effective and feasible on pilot implementation. District level human and financial resources, however, must be augmented to implement health promotion activities effectively.

Key Words: Health promotion, integrated, model, National Health Mission

Introduction

National Health Mission (NHM) encompassing National Rural Health Missions (NRHM) and National Urban Health Missions in India intends to guide states toward ensuring the achievement of universal access to health care through health systems strengthening. Although health is a state issue, center as well state governments run several programs to supplement delivery of health-care services in efficient and effective manner. As a result, multiple
Keeping in view of this background, a district level integrated health promotion project was implemented from 2013 to 2016. The objectives of the project were to assess the current status of health promotion initiatives in the district; to develop an integrated health promotion model and module and its implementation on pilot basis and to assess its effectiveness. The present paper describes the model and its effectiveness at district level.

Materials and Methods

Study area
The study was undertaken in Hoshiarpur (Punjab) and Ambala (Haryana). Both the districts have comparable levels of demographic and health indicators.

District Health Promotion Model and Implementation
Situation analysis in two districts was followed by a state level stakeholders’ workshop in which detailed layout of model and a health promotion manual (Hindi, English, and Punjabi)[2] was developed for capacity building of workforce. The effectiveness of model was assessed using mixed methods approach. Details of baseline assessment in the two districts and development of module have been published elsewhere[1,3]. The draft health promotion model with multicomponent and multilevel interventions was prepared, discussed with experts, finalized, and piloted in the districts. To ensure accountability and sustainability, District Mass Media wing was also roped in for implementation of model at all levels of healthcare. It was assumed that focusing on 13 key risk factors or determinants such as healthy diet, physical activity, tobacco/alcohol use, substance abuse, road safety, stress, safe sex, safe water and sanitation, safe motherhood, personal hygiene, immunization, and oral hygiene, will cover major communicable and noncommunicable diseases (NCD), key RCH issues, and injuries which contribute toward major disease burden in India. The district/block level action plans were prepared with the annual calendar of activities, which were implemented for 1 year with strengthened supervision, monitoring, and reporting of activities supported with a digital platform-based feedback system. Pooling of resources both human as well as financial were recommended keeping in mind the principles of integration, convergence, and multitasking.

Effectiveness of the model
The effectiveness of model was assessed using mixed methods approaches wherein both quantitative and qualitative methods were used. Quantitative methods included facility assessment survey, community survey, and client exit interviews. Qualitative methods included in-depth interviews with state/district level officers and focused group discussion (FGD) with Village Health and Sanitation Committee (VHSC) members in both the districts. The facility assessment was done on the basis of nine parameters details of which are given in Table 1. A total of 4 Community Health Centers, 4 Primary Health Centers, and 12 villages falling under the two districts were surveyed randomly. Exit interviews and community-based survey were carried out among 80 and 120 randomly selected individuals in both the districts. In-depth interviews were conducted with State Mass Media Officers (SMMOs) of Punjab and Haryana and 3 medical officers each in Districts Hoshiarpur and Ambala. One FGD was conducted in each district with the VHSC/Village Level Core Committee (VLCC) members both during the baseline (8 members and 7 members in Districts Hoshiarpur and Ambala, respectively) and endline assessment (8 members and 9 members in Districts Hoshiarpur and Ambala, respectively). Endline results, 2016 were compared with 2014 results using t-test for difference in two proportions from independent samples.

Costing for strengthening health promotion activities at district level
An indicative costing based on the experience of Integrated Health Promotion Project (Hoshiarpur and Ambala) and study of programs at state and district level (Bathinda and Kurukshetra) has been undertaken. It includes cost of training and orientation at all levels, mobility support to functionaries, and incentives to them for carrying out the health promotion work in integrated manner.

Results

Baseline assessment
It was found that health promotion component under National Health Programmes was not implemented
properly, with high vacancy in mass media division with 40% (2 out of 5) and 89% (8 out of 9) of the sanctioned positions vacant in Hoshiarpur and Ambala, respectively with low capacity of staff and budget and is reported elsewhere.\[1\]

**District Health Promotion Model**

A multicomponent, multilevel intervention model with focus on integration and convergence within national health programs, multitasking, multisectoral involvement, community empowerment with use of digital technology at district level and tools of advocacy for healthy public policy, enabling environment, and multisectoral involvement at state level was implemented [Figure 1]. The implementation started in both the districts from September 1, 2014 initially for a period of 1 year and continued. The annual calendar of activities was implemented. District-wise number of IEC/BCC activities undertaken in two districts is given in Table 1.

**Capacity building trainings**

A total 44 trainings (1 at the state level, 5 each at district level in both districts, 27 and 8 at block level in District Hoshiarpur and District Ambala respectively) were organized by using the health promotion manual. 32 participants were trained at the state level, 190 and 127 participants at districts level and 1800 and 1500 health workers at the block level were trained in districts Hoshiarpur and Ambala respectively.

**Multisectoral partnership**

Advocacy meeting was held between the investigator (JST) and Deputy Commissioner of both the districts, to discuss the model and eliciting their support in strengthening District Health Societies. One capacity building training of stakeholders from nonhealth sector comprising education, sports, nongovernmental organizations, municipal corporation, PRLs, and VHSC/VLCC members was done in each district and 93 stakeholders (43 in Hoshiarpur and 50 in Ambala) were trained. The nonhealth sector further organized activities in their respective settings and areas.

**Community empowerment**

The trained workers, in turn, organized health promotion activities in the villages and community members were made aware on the risk factors as given in the manual. The VHSC in District Hoshiarpur and VLCC in District Ambala were activated based on the inputs from FGD with them. In total, 15645 and 12660 (VHND) meetings were held in District Hoshiarpur and District Ambala (2014–2016) [Table 1].

**Technology**

A WhatsApp group was launched in both the districts to improve reporting of IEC/BCC activities. Table 2 shows the district-wise comparison of the reporting which increased as the project progressed. In total, 2129 posts were posted through WhatsApp groups (1289 in District Hoshiarpur and 840 in District Ambala from May, 2015 to July, 2016) [Table 2].

**Supervision and monitoring**

From October 1, 2014 to March, 2016, 40 monitoring visits (20 in Hoshiarpur and 20 in Ambala) have been made and 110 centers have been covered. Monthly feedback report was shared with Civil Surgeons and discussed in monthly meeting with block MO/SMO of the district and district mass media wing by technical team at PGI.

**Effectiveness of the model**

The effectiveness assessment of the model was done by comparing the findings of facility assessment survey

| Type of IEC/BCC activities done | Number of activities done |
|---------------------------------|--------------------------|
| Pakhwaras (health fortnight)    | 72                       |
| Rallies                         | 765                      |
| Camps                           | 345                      |
| Seminars/lectures               | 455                      |
| Nukkad Natak (street shows)/puppet shows | 30   |
| Poster making competition       | 44                       |
| Individual counseling           | 6942                     |
| Group meetings                  | 5440                     |
| Village health and nutrition day| 15,645                   |
| Others, i.e., Jhankis (road shows)/exhibition | 876  |
| Total                           | 30,614                   |

| Quarter                      | Number of posts of IEC/BCC activities in the district |
|------------------------------|------------------------------------------------------|
| May–July 2015               | 95 (7.37)                                             |
| August–October, 2015         | 271 (21.02)                                           |
| November, 2015 to January, 2016 | 301 (23.35)                             |
| February–April, 2016        | 324 (25.1)                                            |
| May–July, 2016              | 296 (23.11)                                           |
| Total                       | 1289 (100)                                            |

Figures in parentheses are percentage
[Table 3], exit interviews of the clients [Table 4], the knowledge level of community members in the baseline and endline survey as given in Table 5.

**Facility-based survey**

The comparison of facility-based assessment of two districts at baseline and endline is given in Table 3. Log book/detailed reporting of IEC/BCC activities was available at endline with structured reporting format specifically for IEC/BCC activities. The IEC material in local language and its display was found to be appropriate and adequate during the endline assessment. Monitoring and supervision of IEC/BCC activities improved in both the districts with records.

**Community-based survey**

The endline survey conducted in 2016 showed a significant improvement in the awareness level of the community members in the districts regarding different risk factors. In communicable diseases, knowledge pertaining to prevention of sexually transmitted infections by the use of condoms increased from 40.8.5% to 79.2% and 36.4% to 71.7% in districts Hoshiarpur and Ambala, respectively. The knowledge about the cause of spread of HIV/AIDS improved from 35% to 93.3% in district Hoshiarpur and 50.9% to 88.3% in district Ambala. In NCDs, the range of normal blood pressure which was known to only 34.5% respondents, increased to 68.3% in district Hoshiarpur, and from 16.4% to 50.8% in district Ambala. Knowledge about recommended amount of salt intake per day (5 g/1 tbsp) improved from 25% to 72.5% and 27.3% to 55.0% in districts Hoshiarpur and Ambala, respectively. Regarding RCH issues, the cause of anemia (Iron deficiency) was known to 25.8% which increased to 85% and 32.7%–76.7% in districts Hoshiarpur and Ambala, respectively ($P < 0.01$) [Table 5].
Table 3: Comparison of facility assessment: Baseline and endline survey in two districts of Punjab and Haryana

| Serial number | Parameters                      | District Hoshiarpur | District Ambala |
|---------------|--------------------------------|---------------------|-----------------|
| 1             | Availability of skilled human resource | Yes                 | Yes             | No              | No              |
| 2             | Presence of district level action plan | No                  | Yes             | Yes             | Yes             |
| 3             | Availability of annual activity calendar | No                  | Yes             | No              | Yes             |
| 4             | Logbook of IEC/BCC activities | No                  | Yes             | No              | Yes             |
| 5             | Availability of adequate IEC material | No                  | Yes             | Yes             | Yes             |
| 6             | Display of IEC material | No                  | Yes             | No              | Yes             |
| 7             | Funds | No                  | Yes             | No              | Partial*        |
| 8             | Monitoring and supervision | No                  | Yes             | No              | Yes             |
| 9             | Integration of IEC/BCC component | No                  | Yes             | No              | Yes             |

*Mainly support from pooling of resources and project funds

Table 4: Percentage difference in IEC/BCC services on client exit interviews in two districts of Punjab and Haryana

| Indicators                                                                 | Baseline (%) | District Hoshiarpur | Endline (%) | District Ambala | Percentage difference (95% CI) |
|---------------------------------------------------------------------------|--------------|---------------------|-------------|-----------------|--------------------------------|
| Satisfaction with the services received at health centers                 | 92.0 (n=42)  | 100.0               | 8.0*        | 39.0 (n=41)      | 100.0                         |
| Shared health information by MO/ANM                                      | 8.0 (n=42)   | 80.0                | 72.0*       | 7.3 (n=41)       | 75.0                          |
| Provision of IEC material at health center                               | 2.0 (n=42)   | 80.0                | 78.0*       | 9.8 (n=41)       | 85.0                          |
| Reading of IEC materials (posters/wall paintings) displayed in health centers | 22.0 (n=42)  | 72.5                | 50.5*       | 36.6 (n=41)      | 76.3                          |

*P<0.05. CI - Confidence interval

Exit interviews

The exit survey showed that dissemination of health information by MO/ANM in routine outpatient department increased from 8.0% in 2013 to 80% in 2016 and 7.3% in 2013 to 5% in 2016 in District Hoshiarpur and District Ambala, respectively which was found to be significant (P < 0.05) as given in Table 4.

In-depth Interviews with State/District level officers/ Medical Officers

State Mass Media Officer/IEC-BCC Consultant

The SMMO in both the states were having written guidelines pertaining to their profile and responsibilities. State level action plan was available by the end of the project. Provision of Mass Media Vehicle for field visit was there and Petroleum Oil Lubricant was provided from NRHM fund. Lack of human and material resources was lamented on during in-depth interview at the time of baseline assessment, which has improved. At endline assessment, the SMMO of both the states reported that the development and implementation of annual calendar of activities have improved the capacity of their staff with strengthening of reporting.

The in-depth interviews with the district level officers/ medical officers in both the districts revealed the improvements in human resource for IEC/BCC activities in District Hoshiarpur but were felt inadequate in District Ambala. The usefulness of annual calendar of activities in terms of planning and timely execution of the activities was felt. The availability and visibility of the IEC material in local language have improved in both the districts as observed during endline survey. The available staff was better skilled due to capacity building trainings. Reporting and supervision for IEC/BCC activities also improved due to specific formats and regular feedback provisions.

Focused group discussion with Village Health and Sanitation Committee members

VHSC is known as VLCC in District Ambala. Although the VHSC members form the important component of information dissemination at the village level, but they seldom receive any formal training as was found during baseline assessment. However, the capacity of the VHSC members was built in nonhealth sector training organized in both the districts and emphasis was given on strengthening multisectoral partnership. Annual calendar of activities was being maintained by the members in both the districts. The topic covering risk factors of communicable diseases and NCDs were also covered in addition to reproductive and child health during the VHSC meetings as found in baseline survey and better reporting of activities by the VHSC and VLCC in both the districts.
Costing

Based on a cascading training strategy involving, health and nonhealth sectors such as education department, the training of trainers should take place at state and district levels so that they may internalize the core values and strategies of the integrated health promotion. Trainings will cost approximately 20% of the cost in the 1st year. For subsequent years, annual recurring costs will include only the costs incurred on human resources with mobility support, meetings for coordination, expenditures on stationary/printing, district level refresher training, etc., and this would amount to approximately INR 2342600 (USD 35240) per district without refresher training and 2999700 (USD 45125) with a refresher training or major mass media event organization.

Discussion

District is the key administrative unit in India. There are 683 districts in the country. The health promotion component of various health programs is implemented in a poor fashion at district level, which needs to be
There is a need to build the capacity of the existing DMMOs, counselors, health inspectors, health workers, and BEEs in the districts and blocks for designing and implementing context-specific IEC/BCC activities locally. District Health Promotion officer should be having a minimum PG Diploma in Health Promotion/Health Communication and existing DMMOs may be encouraged to undertake or improve qualification, which is even offered on correspondence basis by NIHFW and other institutions. Strategy of using whole health workforce of the district with multitasking worked well in this project despite shortage of staff in district mass media wing.

A comprehensive manual developed under the project in three languages covering communicable diseases, NCDs, and RCH issues was used successfully for capacity building, improving knowledge, and skill development of the staff. Some of the IEC materials available at the district level were not relevant as per the local needs and requirements. Focus should be to develop local context-specific IEC/BCC materials, especially in emerging health problems such as...
as NCDs, substance abuse, in addition to conventional health problems. Dissemination of IEC material needs improvements as it was observed that IEC materials were stocked in the health centers and are not disseminated at the village/community level.

Many of the social determinants of health and risk factors of NCDs lie outside the purview of health sector. A multisectoral action for health is very crucial, especially for prevention and control of NCDs. National multisectoral action plan for the prevention and control of NCDs can be used for this purpose.[9] There should be convergence with other programs such as Swachh Bharat Mission, National AYUSH Mission, Smart cities, and National literacy mission. DMMO and District Programme Officer (DPO) need to explore opportunities for securing technical support from local development partners, local bodies, and other partners in implementing IEC/BCC activities at local levels.

Mid media such as street plays, rallies, and interactions with local community are important strategies to reach the families and households.

There was a possibility of misreporting as observed in cross checking of the records. There was no supervisory format for monitoring of scheduled IEC/BCC/health promotion activities. DPOs/DMMOs should regularly monitor and supervise the IEC/BCC activities. It will help in improving reporting and checking fictitious reporting.

Multilevel and multicomponent approaches of health promotion alleviate the impact of risk factors. Setting-based approach of health promotion is one of the approaches, which promotes establishment of healthy settings such as healthy schools, workplaces, hospitals, villages, cities, and communities. There is enough evidence to incorporate the setting-based experiences from India. A 12 weeks and 20 weeks lifestyle intervention in school settings has been found to be effective in Chandigarh.[10,11] An accreditation system for Health Promoting Schools (HPS) was developed and piloted in Chandigarh from 2011 to 2013 and proportion of schools with gold accreditation increased significantly from 23.5% in 2011 to 76.4% in 2013.[12] Accreditation of HPS is now being up scaled to all schools in Chandigarh and Hyderabad city under Indian Council of Medical Research (ICMR) project in 2016 and can be taken up at national level. Similarly, a healthy workplace model was developed and implemented in three industrial settings of North India under WHO-Government; of India collaborative program for National NCD programme for 12 months in 2008 and was found to feasible and effective. A stepwise approach for healthy workplace with core, expanded, and optional components were recommended.[13] Within the community, Chandigarh Healthy Heart Action Project was initiated in 2004 with an aim to increase awareness regarding major NCD risk factors among the community members.[14] All these models were used to some extents in this project and can be replicated in other districts.

Routine supervision and monitoring should be supplemented with the external evaluation system at the district level. The inclusion of IEC/BCC/health promotion component in the National as well as district level reviews and surveys such as DLHS, NFHS, CRM, JRM, and AHS, is therefore recommended. Without strengthening preventive components, it will be difficult for the country to achieve SDGs by 2030.

The community survey was undertaken to supplement the facility-based assessment in the selected districts. Hence, the sample size was kept small for rapid assessment which may be a limitation of the study. District Health Promotion Model was feasible and effective in the selected districts and should be upscaled in other districts. The results of this study can be generalized to the selected districts and may be upscaled to other districts and in other states. The specific recommendations were discussed and finalized in a National dissemination meeting held in 2016 for MOHFW, State Governments; and ICMR. Key recommendations for MOHFW/states included that the preventive component under NHM needs strengthening with better resource allocation, adequate human resources, and pooling of existing resources. The state government may replicate the model in other districts and allocate more resources. Integrated Health Promotion Model and manual can help in strengthening of preventive component of health system in India. ICMR should fund more research to generate evidence pertaining to health promotion interventions.

**Conclusion**

Model was found to be effective and feasible on pilot implementation. District level human and financial resources, however, must be augmented to implement health promotion activities effectively.

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Conflicts of interest
There are no conflicts of interest.

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