

Improving health promotion activities in Sri Lanka state hospital setting; Effectiveness of a clinic-based intervention

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ABSTRACT

Background: Health Promotion (HP) is the process of enabling people to increase control over and to improve their health: an efficient and cost-effective approach to foster a healthy population. Hospital HP targets the patients who are more receptive to attitudinal and behavioural changes. Health Education and Promotion Nursing Officer (HENO) functions as the generator and coordinator of all HP activities.

Objective: The HENO of Base Hospital-Galgamuwa (BHG) was underutilized for HP services, and inadequate number and coverage of HP services had created patient dissatisfaction. This research project aimed to improve the HP services conducted by HENO through implementing appropriate, cost-effective and sustainable interventions. Medical and Diabetic clinics which cater to the large disease burden on non-communicable diseases as evidenced by hospital e-IMMR were prioritized for the project. The top diseases resulting in 82.5 % of patients' clinic attendance, namely HT, DM, IHD and CKD either as single or combined were selected to intervene.

Methods: The study was carried out in three phases adopting mixed-method approach. Qualitative technique, the focus group discussions, was primarily applied for planning interventions. Quantitative techniques which included patient surveys and checklist were mainly employed for assessing the effectiveness of implementation. Based on the pre-intervention assessment, literature review and comprehensive stakeholder consultation, an interventions package was planned and implemented. Effectiveness was assessed three months after implementation using the same instruments.

Results: The major deficiencies identified were inadequate man hours allocated for HP due to greater demand for curative care, insufficient computing skills of HENO, poor needs assessment before planning, and non-availability of a regular mechanism for planning, coordination, monitoring and evaluation of HP services of HENO at hospital level.

Interventions package included 'Monthly HP Themes', themes-derived twelve Monthly topics for Small Group HP, bi-annual Patient survey for need-based approach to HP; Cover-up of HP services during HENO's leave/off days, Referral and Appointment systems to increase man hours for HP; Applying multiple IEC material display techniques, namely designing and demonstrating HP videos using TV displays, printing HP messages in clinic book and rotating HP posters monthly matching monthly themes, to reduce utilizing man hours for HP; Communication and Computing Skills building; and Establishment of Hospital HP Committee for planning, monitoring and evaluation and quarterly Review of HP services of HENO at hospital level.

Following implementation, the number of HP sessions conducted by HENO showed a 75% increase while the average number of HP sessions attended by a patient per month increased significantly ($p < 0.05$) from 0.52 to 1.24. Coverage of patients either with individual or small group sessions had increased in 83%. Patients who received at least one HP session during a month significantly increased ($p < 0.05$) from 46.3% to 93.4%. Patients' overall satisfaction on HP services conducted by HENO improved significantly ($p < 0.05$) from 15.9% to 61.8% as their satisfaction on all service attributes showed statistically significant improvements. The service providers perceived interventions as user-friendly.

Despite resource constraints, interventions proved to be effective in improving the HP services conducted by the HENO at BHG. It is therefore recommended that other similar resource-poor hospital settings implement the same/similar project, subjected to periodical updates of HP messages for keeping up with new knowledge, to improve HP services conducted by HENOs.

Keywords: Health Promotion, Health Education, Nursing Officer, Hospital

I. INTRODUCTION

The Ottawa Charter defines Health Promotion (HP) as the process of enabling people to increase control over and to improve their health.¹ Health Promotion embraces health education, disease prevention, and rehabilitation services and is a proven highly cost-effective strategy to foster a healthy population. Health serves development and vice versa.

Sri Lankan HP Policy recognizes HP as an efficient and cost-effective approach which was evidenced by many public health successes including the fight against infectious diseases and ending preventable maternal deaths. Hospital HP (HP) is an integral component of total HP Programme.

Health is affected by a broad array of determinants that lie outside the hands of health sector. Health issues can effectively be addressed by adopting a holistic approach of empowering individuals and communities to act for their health.² The objectives of HP include, identification of opportunities and appropriate means; strengthening ongoing and initiate new programmes; defining roles/functions of different staff categories, ensuring necessary technical, managerial and social support; promoting a conducive hospital environment for sustainability, and planning, implementation and evaluation with relevance to HP services.³ In hospitals where a designated Medical Officer has not been appointed for HP, Health Education and Promotion Nursing Officer (HENO) functions as the generator and coordinator of all HP activities with inputs from the Hospital HP Committee (HHPC).

Health services of Sri Lanka have evolved as two distinct and parallel components: Curative and preventive services, and HP is an important area that integrates both.⁴ Hospital HP is a major activity of the Ministry of Health executed through curative institutions with technical guidance from the Health Promotion Bureau (HPB).³ Although hospitals play an important role in health education and promotion for disease prevention and rehabilitation, increasing prevalence of chronic non-communicable diseases (NCDs) require a more expanded scope and systematic approach to HP.⁵ Chronic NCDs now account for estimated 75% of deaths in the country.⁶

Specialist clinics in secondary and tertiary facilities are managing 65% of NCD cases. The most people at high risk of Coronary Vascular Diseases (CVD) do not know their ideal weight (86%), blood pressure (82%), or blood glucose level (95%). Just 25% of participants at high CVD risk could recognize their CVD event risk. Fewer people remembered instructions to increase their physical exercise compared to dietary instructions.⁷ Therefore, hospitals too should contribute to the primary and secondary prevention of NCDs since 80% of CVD, stroke and type 2 diabetes could be prevented by eliminating shared risk factors, mainly, tobacco use, unhealthy diet, physical inactivity and harmful use of alcohol.⁸

Health promotion is a core quality issue for improving health and sustaining quality of life.⁵ The responsibility for HP in health services is shared among individuals, community groups, health professionals, health institutions and governments.⁹ Health sector's role must move increasingly towards HP direction, beyond its responsibility for providing curative services (WHO, 2019c). However, HP strategies should match local needs and possibilities of individual countries considering differing social, cultural and economic systems.

Health promotion interventions conducted targeting settings are more effective for lifestyles change than population-based approaches alone.¹⁰ The circular on HP (No. 01-28/2011) is an important milestone in hospital setting.¹¹ However, the poor accessibility to already available IEC materials of HPB hampers the planned HP services (Koggalage, 2019)¹². Fernando (2011)¹³ in a quasi-experimental study among 233 participants in a preventive setting proved that oral health of pre-school children can effectively be promoted by improving oral health knowledge, practices and skills of mothers/caregivers. Latif et.al. (2016) found that educational video display is a novel and effective method to improve the knowledge and attitudes on coronary artery disease in a UK community setting. Upon viewing, all participants had agreed to implement the sustainable interventions.

II. METHODS

This interventional study carried out at the Medical clinic (MC) and Diabetic clinic (DC) of the Base Hospital-Galgamuwa was conducted in three phases.

1. Phase I (Pre-intervention) - Assessing the existing level of HP services conducted by HENO and factors contributing to HP services of HENO

2. **Phase II (Design and implementation of interventions)** - Designing and implementing an interventions package for improving HP services of HENO

3. **Phase III (Post-intervention)** - Evaluating the effectiveness of the interventions implemented in Phase II after three months

Study population consisted of patients of selected clinics who are the project beneficiaries. The sample size was calculated to be 403.¹⁴ Number of patients selected from each clinic was proportionate to the clinic attendance in the previous quarter. Required number of patients from each clinic was recruited using convenient sampling method to represent each hour of conduct of the clinic. Of the sample 282 patients were recruited from the medical clinic and 121 patients from the diabetic clinic.

Following quantitative and qualitative research methods were applied in Phase I to identify the current level of HP services conducted by HENO and factors contributing to HP services of HENO, and in Phase III to evaluate the effectiveness of project.

- **Key Informant Interviews (KIIs)** – with the Medical Superintendent, Consultant Physician, Medical Officers, Nursing Officers
- **Desk review** of Registers of HP unit
- **Direct observations** – using a ‘Checklist’
- **Surveys** – with eligible patients of each clinic using two separate ‘Structured interviewer-administered questionnaires for phase I (n=389) and phase III (n=395).

Phase I - Pre-intervention assessment

The current level of HP services conducted by HENO and its contributing factors were assessed and information was used for designing and implementing interventions. Inadequate man hours allocated for HP, Insufficient computer skills of HENO, Poor needs assessment before planning HP and Lack of a regular mechanism for planning, coordination, monitoring and evaluation of HP services of HENO at hospital level were identified as gaps.

Phase II - Design and implementation of interventions

An interventions package to improve identified deficiencies were developed and implemented. The package consisted of the followings;

1. Need-based approach for planning HP services.
2. Monthly HP Themes and deriving twelve HP topics for Small Group HP. The local mortality pattern in hospital e-IMMR showed NCDs as leading causes of deaths. Disease composition among patients of the selected clinics was identified through a sample survey. National morbidity and mortality trends and aspirations of the country were also considered. Taking priority diseases as monthly themes, twelve important topics were derived.
3. Increasing man hours for HP services - Cover-up arrangements for HP services of HENO during HENO’s leave and off days. Four other capable and motivated NOs suggested by project stakeholders with NOs’ interests for engaging in HP services while ensuring ward duties were selected to cover up HP duties of HENO at MC and DC.
4. Referral system- - Doctors were requested to refer needy patients through the clinic book to NOIC for Individual/Small Group Sessions giving priority for new patients/with combined diseases. Monthly topics list for Small Group Sessions was displayed on doctors’ clinic tables.
5. Appointment system - The NOIC gives appointments in HP Referrals Register for Small Group HP (<25 participants) once a week at 10.30 am onwards on predetermined dates. The same topic was repeated throughout the month.
6. Applying multiple IEC material display techniques to reduce man hours utilized for HP Utilizing TV displays - A TV display was effectively utilized for regular display of HP videos at the waiting area. The HENO, under the guidance of CP and MO-QMU, prepared short video clips (Annexure-XI) on key issues prevailing at selected clinics relevant to the monthly topic.
7. Designing a clinic book with printed HP messages - Messages developed related to NCDs were finalized at HHPC.
8. Monthly rotation of HP posters as per the ‘Monthly Theme’
9. Capacity building for effective HP - A short training on basic computing skills was conducted for HENO and covering up four NOs using internal resources. A certificate was awarded on successful completion. A competent member among selected four NOs was given the ‘Five-day Training of Trainer on Communication Skills Development’ offered by HPB. Following successful completion, the rest was trained by the said trainer. Hospital Health Promotion Committee (HHPC) chaired by MS and represented by all key stakeholders of HP was established to meet monthly for above functions as per the circular on HP.¹¹
10. Quarterly review of HP services -Preparation and presentation were assigned to HENO (Format: Annexure-XVII) at HHPC meeting.

Phase III - Post-intervention assessment

Effectiveness of the project was evaluated during Phase III.

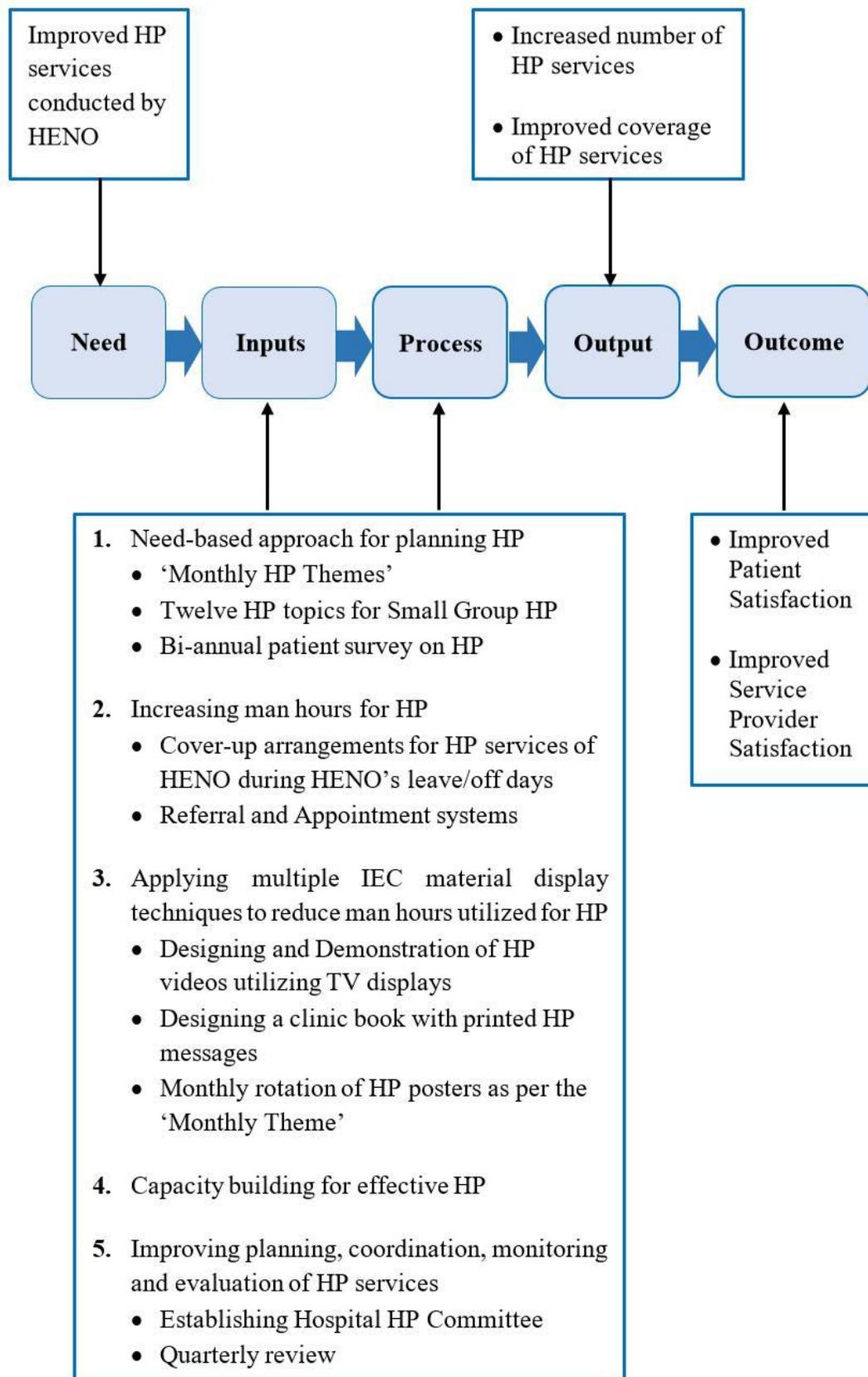


Figure 1: Conceptual framework

III. RESULTS

The priority deficient areas were; Poor needs assessment before planning HP, Inadequate man hours dedicated for HP, Insufficient computer skills of HENO, Lack of regular mechanism for planning, coordination, monitoring and evaluation of HP services at hospital level.

Number of patients served either with Individual/Small Group sessions was increased by 83%. There was a significant improvement ($p < 0.05$) in percentages of participants who received at least one HP session and covered with important aspects of HP other than disease/s and its/their complications.

Table 1: Comparison of coverage of HP services before and after interventions

Indicator	Number/Percentage (P)		% increase/Z test
	Pre- intervention	Post-intervention	
Number of patients served either with Individual or Small Group HP session/s during a month	34	170	83%
Percentage of participants received at least one HP session during a month	46.3 (180/389)	93.4 (369/395)	$z = -14.4062$ $p < 0.001$
Percentage of participants covered with important aspects of HP other than the disease/s and its/their complications during last three months	17.5 (68/389)	79.2 (313/395)	$z = -17.299$ $p < 0.001$

There was a significant increase ($p < 0.05$) in respondents' perceived usefulness of HP services and the levels of patients' satisfaction on all attributes of HP services of HENO. Service providers' satisfaction on HP services was also increased by 100%.

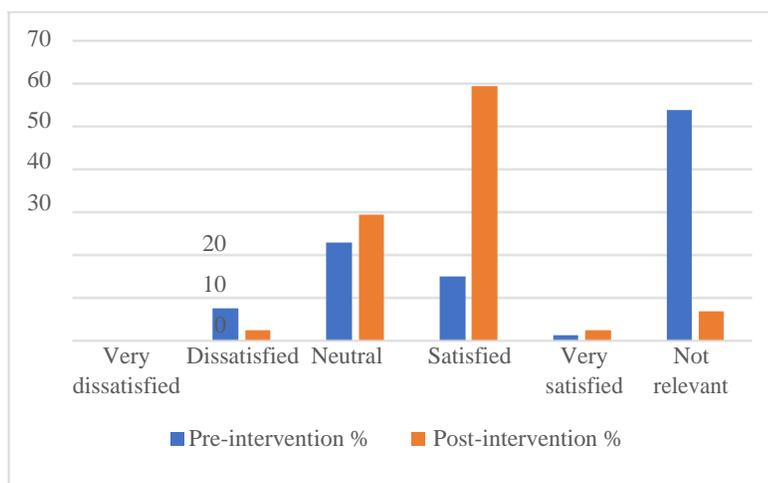


Figure 2: Comparison of ratings of patients' overall satisfaction on HP services

There was a significant increase ($p < 0.05$) in respondents' perceived usefulness of HP services and the levels of patients' satisfaction on all attributes of HP services of HENO. Service providers' satisfaction on HP services was also increased by 100%.

Table 2: Pre and post intervention perceived usefulness of HP services

Indicator	Percentage (P)		% increase/ z test
	Pre intervention	Post intervention	
Percentage of respondents perceived that regular HP services at clinics are useful	45.0 (175/389)	86.8 (343/395)	$z = -12.3738$ $p < 0.001$
<i>Patients' satisfaction on attributes of HP services</i>			
Number of sessions	12.3 (48/389)	55.4 (219/395)	$z = -12.7334$ $p < 0.001$
Meaningful content	18.5 (72/389)	49.9 (197/395)	$z = -9.2489$ $p < 0.001$
Clarity	20.8 (81/389)	55.2 (218/395)	$z = -9.9053$ $p < 0.001$
Attractiveness	15.4 (60/389)	52.6 (208/395)	$z = -10.9895$ $p < 0.001$
Covering important topics	3.1 (12/389)	55.2 (218/395)	$z = -16.0211$ $p < 0.001$
Overall satisfaction	15.9 (62/389)	61.8 (244/395)	$z = -13.1536$ $p < 0.001$
Service providers' satisfaction on HP services conducted by HENO	0.0 (0/6)	100.0 (6/6)	100% (6/6)

IV. DISCUSSION

This interventional study, aimed at improving the HP services conducted by HENO at BHG through implementing an interventions package, was carried out in three phases as pre-intervention, intervention and post-intervention phases. For enriched evaluation and scientific integrity, mixed-method approach was adopted.¹⁵

The leading causes of morbidity and mortality of the area were NCDs. Therefore, stakeholders prioritized MC and DC for interventions which were planned considering time availability, administrative feasibility, cost-effectiveness and sustainability while not disturbing the routine functioning of the hospital. Staff as well as patients were involved throughout from the planning stage. As succeeded by Adhikari (2018)¹⁶, staff acceptability was considered a significant decision factor when selecting interventions during planning. Also, the resources required to develop interventions were identified following discussions with internal stakeholders. All were implemented with full stakeholder participation. Initial doubts of BHG staff were overcome by explaining the benefits of new developments.

The current level of HP services conducted by HENO was assessed through service receiver and service provider perspectives, and objectively through HP records. All revealed that the current level is not satisfactory. Patient expectations were assessed

through the pre-intervention survey to match services with beneficiaries' expectations. The main source of HP was electronic media while printed media and field workers played a minor role. For one third of patients, clinic was the only source of HP which was compatible with knowledge deficit detected in Sri Lankan survey in 2013.⁷ The majority of participants (90.7%) expressed the importance of clinic HP. Small Group HP was preferred over large groups by the most. Patients suggested the use of TV displays for HP.

During this phase the interventions package was designed and implemented with stakeholder participation to address the identified deficiencies. Limited time for HP was remedied by two approaches: Increasing man hours and utilizing multiple IEC material display techniques for reducing man hours utilized. Need-based HP was welcomed by all internal stakeholders. Monthly themes facilitated efficient use of limited resources and supported reducing the utilization of man hours for HP while catering for need-based approach. Bi-annual patient survey was expected to explore changes in patients' expectations over time to match them with services.

All key informants perceived that interventions are worker friendly. Findings of pre and post intervention assessments were compared to assess the effectiveness. Human resource limitations could successfully be compensated through executed strategies. An array of videos of about half-hour on the monthly theme was displayed starting from the most important. The display is started by the NOIC when the first round of patients is awaiting seated for consultation and was scheduled to automatically replay the array hourly to maximize coverage. As proved by Latif et.al. (2016).¹⁷ TV displays was an effective and attractive mean. However, poor visibility for the back seats was a limitation.

The 75% increase in total numbers of sessions and the significant increase ($p < 0.05$) in average number of HP sessions attended by a patient were achieved through cover-up of HP services by trained NOs during of HENO's leave and off days, utilizing ICT, and Referrals and Appointment systems for Small Group sessions. Improvement of computer literacy sufficient to search for new knowledge and IEC materials development was a great motivator towards this increase. The praises of patients and commitment of HENO as the Focal Point also supported the result. Improvements in number, coverage, attractiveness, meaningful content of HP sessions might have contributed for the significant increase in the percentage of respondents expressed the usefulness of regular HP sessions at clinics.

Service providers' satisfaction on HP services conducted in selected clinics were increased by 100% due to convenience experienced while performing their duties and responsibilities, and effectiveness of interventions leading to a favourable change in patients' compliance. Ratings of patients' overall satisfaction on service attributes increased significantly ($p < 0.05$). There was a significant decrease in the percent of 'Not relevant' responses which represents the proportion who had not attended HP sessions at the clinic during last month.

Despite the difficulties in initial stage, interventions package proved successful in improving the HP services conducted by HENO at BHG. Latif et.al. (2016)¹⁷ and Fernando (2011)¹⁵ also proved that HP interventions are effective for HP in preventive health settings. It could be concluded that the package of interventions in the present research was effective in improving the HP services conducted by HENO at BHG.

V. CONCLUSIONS

The interventions package significantly increased the number and coverage of HP services conducted by HENO ultimately resulting in improved satisfaction on HP services among patients attending MC and DC, and BHG staff. Hence, the intervention was effective in improving the HP services conducted by HENO at BHG.

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