

ORIGINAL ARTICLE

Evaluation of National Program on Prevention and Control of Hypertension: The Study Protocol

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ABSTRACT

Hypertension probably is one of the most important public health problems worldwide. Attributed burden of arterial hypertension in Iran is estimated to be 14.85 per cent. Iranian Ministry of Health proposed a national program named as the Hypertension Control and prevention Program (HTNCP) for case finding and conducting interventions related to physical activity and a healthy diet and if necessary provide treatment to decrease the related risk. In general terms, most definitions agree that evaluation involves the assessment of results achieved by a program directed towards a socially valued objective(s), but how these results are categorized and described can vary widely. System analysis framework and client oriented approach were the bases of designing the evaluation model in this study. In this study we design an evaluation model for Hypertension Control and prevention Program (HTNCP) This model was consisted of four parts: Input indicators, output indicators, intermediate outcome indicators, Ultimate outcome indicators. Then the further indicators were defined in each four parts. In addition to the measures which were mentioned in system analysis framework; care receivers and health providers' opinions in this national program, were of the most important factors and were considered in the model. In this study the designed model included four parts with a chain connection. Each part consisted related indicators. The Data collection tools and questionnaire were designed to assess these indicators. Hence the coverage of program, acceptability of program, accessibility and opinions of care receivers and service provider and situation of control of HTN and BMI in patients would be analyzed and program enhancement could be done based on it. **Keywords:** Evaluation, Program, Prevention, Hypertension, Iran.

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INTRODUCTION

Non-communicable diseases (NCDs) currently are cause of 43% of burden of diseases. It is expected NCDs are responsible for more than 60% of disease burden and 70% death by 2020.[1] In this regard hypertension probably is one of the most important public health problems in developing country [2]. Coronary heart disease (CHD) is the leading cause of death in many developing and developed countries and it accounts 11 percent of burden of diseases because of hypertension [3,4]. Intensive investigation into the CVD epidemic largely began in the 1940s and is well done in many studies [5-10]. The risk factor concept—that particular biologic, lifestyle, and social conditions were associated with increased risk for disease — developed out of CVD epidemiology [6,7].

Coronary heart disease and stroke, the two major causes of CVD-related mortality, are not influenced to the same degree by the recognized risk factors. For example, elevated blood cholesterol is a major risk factor for coronary heart disease, and hypertension is the major risk factor for stroke. Physical activity, smoking cessation, and a healthy diet, which can lower the risk for heart disease, also can help lower the risk for stroke. [11]. Hypertension as a risk factor is principle cause of coronary ischemic diseases, cerebral vascular diseases, congestive heart failure and cerebral haemorrhages. Also it is the second cause for chronic renal disease after diabetes [12, 13].

In 2002 in Iran it was estimated that the cost of coronary Heart diseases was over 300,000,000,000 Rials and in the petroleum industry the cost of coronary Heart diseases admissions was over than 30,000,000,000 Rials [12].

In Iran proportion of attributable burden of arterial hypertension in total risk factors burden is 14.85 [14]. Iran Ministry of Health in 2002 proposed a national program for case finding and conducting healthy behaviour such as physical activity, smoking cessation and a healthy diet to prevention and treatment of hypertension. There is a widespread health network through country which provided primary health care's almost to all population. Accessibility to this facility provided the circumstances for integration the mentioned program. General physician and Behvarz whom were responsible for care delivery in health network, also are providers in hypertension control program [15].

In this program, service delivery processes included:

- Community - readiness
- Case-finding: In primary stage community were informed and then they were examined by Behvarz and G.P
- Smoking, physical activities and diet training/education for detected cases.
- Treatment of detected cases if needed
- Follow up the detected cases every three months by Behvarz and GP
- Referring the detected cases to specialist if needed

Target group was the people over 30 years old.

The name of program was "hypertension prevention and control program" We will refer it in this essay as "HTNCP".

The first step of program was done through all rural regions.

As specified, improving the quality and performance of healthcare delivery systems represents one of the most significant challenges facing government and society in the U.S. and internationally. A promising strategy for improving healthcare quality is the systematic implementation of research findings and related practices known to generate better outcomes than prevailing practices. Unfortunately, barriers to successful implementation of effective practices are considerable and not fully understood; and reliable, effective strategies to facilitate implementation, particularly on routine basis, are underutilized [16].

Evaluation may be approached from many different perspectives, as is evident from the wide array of categorizations and terminology used to describe it. In general terms, most definitions agree that evaluation involves the assessment of results achieved by a program directed towards a socially valued objective, but how these results are categorized and described can vary widely. Once these objectives and dimensions have been identified, result may be viewed as occurring at different levels of a hierarchy. The hierarchy helps to establish a sequence (or progression) of events, and allows for results to be categorized in relation to a set of immediate, intermediate and ultimate objectives. Each level in the hierarchy offers a legitimate and potentially desirable target for assessment. [17]

In 2004 Institute of Health Sciences Research became responsible for evaluation this national program [18].

The aim of this study was to design an appropriate model for evaluating the "hypertension prevention and control program"

MATERIALS AND METHODS

Setting:

-The summary of hypertension control program (HTNCP):

The HTNCP is currently taking place across the rural regions in all provinces of Iran. In HTNCP all of people over 30 years old should be announced about the implementation of the program.

After announcement of the HTNCP, target people must be referred to Behvarz and then to GP for case - finding .Identified cases must be follow up regularly every 3 months .Measuring of HTN and BMI life style education and recording the drugs administration and related complications were carried out in each follow up.

This program was directed by centres of disease control (CDCs) in related medical universities. Each health house has a defined population which provides services to them. For evaluation of HTNCP in each province a sample of health houses, health providers (general physicians and Behvarzes) and CDC staff were selected. In each health house under coverage population and related documents were studied.

Population study

As mentioned before target group of HTNCP was the people over 30 years old.

For evaluation systematic random sampling method was used and 540 health houses were selected in country and 18 household in each health houses were studied. As evaluation project for this program take

place 3 years after starting the program, consequently individuals over than 33 years were selected for evaluation study. In this way 15973 persons were studied during 2 weeks

Program staff study

General physicians (GP): General physicians were one of the important providers in HTNCP in health house. The physician questionnaire consists of question which assessed the situation of program implementation, acceptability and adequacy of resources.

Behvarz: behvarzes were health workers and had important role in providing the services in HTNCP. Their opinions about situation of program implementation, acceptability and adequacy of resources were studied through Behvarz questioner.

Centre for disease control and Prevention (C.D.C) staff: CDC delegates from all medical universities in the country were invited to participate in a training workshop. These delegates were coordinator for data collection and quality control of that in areas related to their medical university. a package of all questionnaires, their fulfilment guidelines, list of samples, and gaunt chart for gathering data were prepared.

Evaluation Model

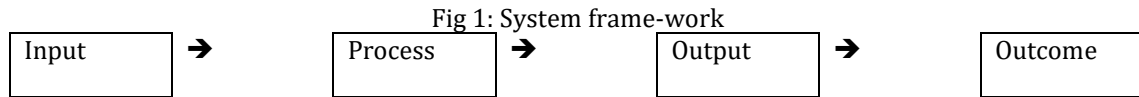
In this study we design an evaluation model for mentioned program.

At first this program was studied considering two approaches:

- system analysis frame-work
- client oriented

System analysis frame-work[18-19]

When the systems schema is used in conjunction with a conceptual frame-work such as the one illustrated in figure 1, a practical and useful hierarchy of evaluation objectives and associated program features emerges. This facilitates identification of appropriate program indicators and helps to ensure an evaluation design that maintains consistency across objectives, methodology and appropriate sources of data:



Inputs refer to the human and financial resources, organizational and physical infrastructure, and operational policies that enable services to be delivered.

Processes refer to the functions carried out by the program such as management and supervision training, information – education – communication (IEC), commodity and logistics.

Outputs refer to the direct results of the program, service output indicators that measure the adequacy of the service delivery system include: number of service delivery points and personnel, quality levels achieved by service providers, and the image or acceptability of the program produced the degree of service utilization.

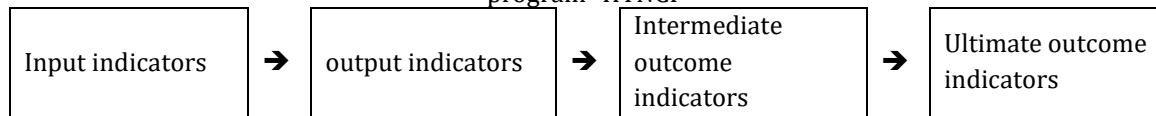
Finally, **outcomes** refer to changes in status or behaviour at the population level.

In addition to the measures which was mentioned in system analysis frame-work; target group satisfaction in this national program is one of the most important factors.

Sensitive to the needs of patients in which doctors and other health professionals will listen to and discuss fully with their patients who provide feedback concerning their level of satisfaction with the service offered in order to guide improvements in care is one of the most important factors in evaluation.

Thus considering system analysis frame-work and program acceptance in view of the care receivers and health providers, the evaluation model for evaluating the “hypertension prevention and control program” HTNCP was designed as is shown in figure 2.

Fig 2 – Chain connection of four parts in evaluation model for “hypertension prevention and control program” HTNCP



Hence this model was consisted of four parts; Input indicators, output indicators, intermediate outcome indicators, Ultimate outcome indicators Then the further indicators were defined in each four parts.

Input indicators included these ones:

- a) Trained human resources assessment included physicians & Behvarses

b) Materials & equipment assessment consisted of manometer, stethoscope, ophthalmoscope weight scale, height scale, required drugs and guideline manuals.

Output indicators included these ones:

- a) Case- finding coverage
- b) The condition of detected patients,
- c) Accessibility
- d) Care receiver' opinions
- e) Health providers' opinions

Intermediate outcome indicators included these ones:

- a) The number of patients under the care of Behvarzes
- b) The number of patients under the care of physicians
- c) The number the referred patients to the specialists
- d) The number of Patients under the care of specialists

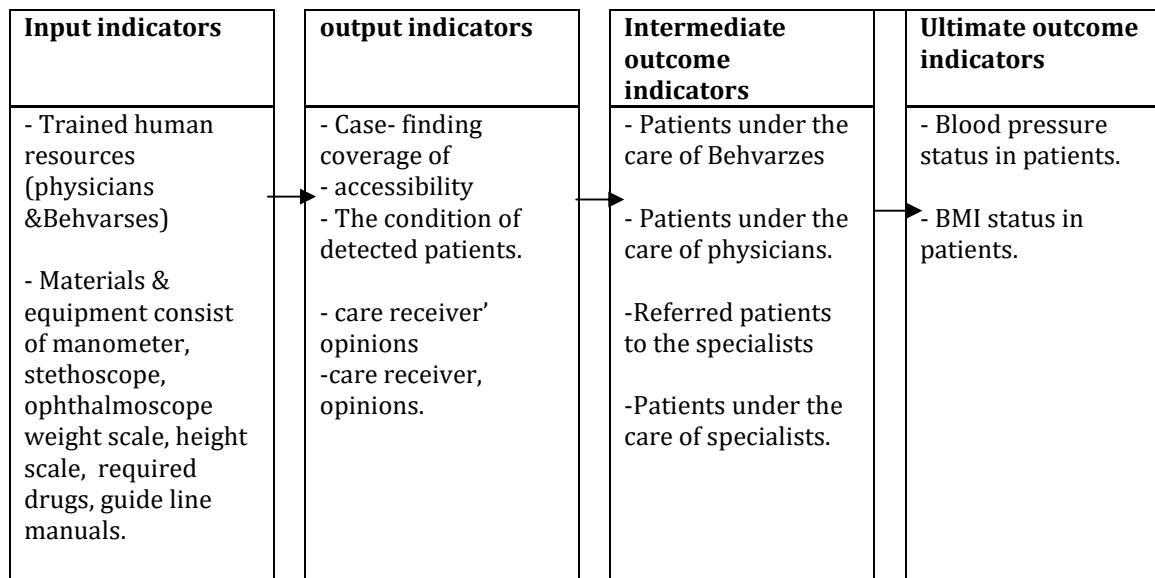
And finally

Ultimate outcome indicators included these ones:

- a) Blood pressure status in patients
- b) BMI status in patients

In fact the final model is shown in figure 3.

Fig 3 – evaluation model for “hypertension prevention and control program” HTNCP



With considering widespread indicators, data sources were defined and data collecting tools were designed.

A broad base of formative evidence was collected in order to describe and understand the context in which the interventions were implemented. The researchers must clarify specific objectives for each intervention; formulated evaluative questions, developed semi-structured interviews tailored to each intervention, and identified informants. [20]

Thus in this study the principal investigator and two members of research team studied the program documents and also had three site visits .Then the fallowing questionnaires were designed:

1. The questionnaire of assessing outputs of the program.
2. The questionnaire of assessing outcomes of program.
3. The questionnaire of assessing the situation of program implementation and adequacy of resources and program acceptance from view of physicians and Behvarses.
4. The questionnaire of assessing the program acceptance from view of care receivers.
5. The questionnaire of assessing the situation of program implementation and adequacy of resources from view of program responsible in CDC.

The designed questionnaires pre-tested in 3 districts and necessary final modifications were carried out.

RESULTS AND DISCUSSION

Health improvement is associated with health program management. Effective management of a health program needs to complete understanding of management cycle of health programs and appropriate

activities in each stage of this cycle. This cycle conclude planning, acting and evaluating the activities. Program evaluation is an important stage in management cycle and has an important role in program success.

Implementation of research into practice in health care systems is a challenging and often unsuccessful endeavour, particularly when those persons introducing or researching change fail to adequately understand and modify the context and progress of implementation or make appropriate adjustments to achieve goals. Formative evaluation (FE) – a long-standing technique in program evaluation – can play an important part in implementation projects. Using FE can provide critical information about the processes of implementation that can enhance the success and understanding of projects designed to improve health care [21].

Evaluation helps the program to achieve its goals. In evaluation the results of program is reviewed, the program defects detected and corrective actions is provided. It is obvious that evaluation must be one of the stages of programming because it is the best time for defining evaluation indicators. These studies necessitate rigorous site diagnostic analysis, partnerships with key clinic stakeholders in the intervention development process, significant external facilitation by the study team, and extensive formative evaluations to shape the intervention and both influence and understand its impacts [22].

In this study, evaluation have planned about 3 years after implementing the program consist of patient's screening and providing health and medical care to them; researchers have tried to reveal a real picture of present situation of program with complete study of evaluation of program in order to continuous improvement of the program. Evaluation indicators must be analyzed in an appropriate analytical model. In this model with sorting indicators and assessing them, is tried to present a comprehensive and system oriented view for analysis.

CONCLUSION

In this study an evaluation model was designed .This model included four parts with a chain connection. Each part consisted related indicators. The Data collection tools and questionnaire were designed to assess these indicators. Hence the coverage of program, acceptability of program, accessibility and satisfaction of care receivers and service provider and situation of control of HTN and BMI in patients would be analysed. And program enhancement could be done based on it.

At last for effective evaluation is proposed that:

- Monitoring and evaluation indicators must be defined at time of designing program
- Appropriate forms and statistic software's must be designed and selected according to indicators,
- Mentioned forms and software's must be presented to health care delivery systems
- Different levels of data collection and reporting them must be trained.

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