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Evaluation of health experts' education program for becoming multiprofessionals (family health caregiver) regarding health system transformation plan: An application of CIPP model

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Abstract:

BACKGROUND AND OBJECTIVES: This study was conducted to evaluate the health experts and professionals' education program in order to become multiprofessionals regarding health system transformation plan by a descriptive and educational evaluation method based on the context, input, process, and product (CIPP) evaluation model in 2018.

MATERIALS AND METHODS: The statistical population included managers and experts of health deputy (13 people), managers and authorities in health networks (32 people), teachers (251 people), and learners (1914 people). Data were collected by four researcher-made questionnaires based on the CIPP model and evaluation checklist of facilities and equipment. The view of experts was used to measure the face validity and content validity of the questionnaire, and Cronbach's alpha coefficient was used to determine reliability. Data were entered into SPSS 23 software, and data were provided using descriptive statistics (frequency, mean, and standard deviation).

RESULTS: The evaluation indicators of the educational course in the field of context were evaluated desirable by province's managers and experts (95% questions), city managers (100% questions), teachers (95% questions), and health caregivers (80% questions). In the field of input, it was evaluated desirable by managers and experts' input of province (60% questions) and city managers (70% questions) and it was evaluated semi-desirable by teachers (78.95% questions) and health caregivers (88.24% questions). In the field of process, it was evaluated desirable by province's managers and experts (73.68% questions) and city managers (66.67% questions) and it was evaluated semi-desirable by teachers (66.67% questions) and health caregivers (94.4% questions). In the field of product, it was evaluated semi-desirable by managers and experts of province (63.63% questions), teachers (81.81% questions), and health caregivers (100% questions) and it was evaluated desirable by city managers (72.72% questions).

CONCLUSION: Holding initial service education course of health caregivers has been necessary, and the public health, family, and midwifery disciplines needed to be educated in a university appropriate to the description of tasks of health caregivers.

Keywords:

Context, health caregiver, input, process, product

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Introduction

Almost everyone emphasized the necessity of reforms in the health system. The most important factors that make health-care reforms inevitable are as follow: the increasing health costs, demographic changes along with increasing life expectancy and life span, increasing occurrence and prevalence of chronic diseases, increasing literacy, knowledge and awareness of people, and increasing expectations and needs, emerging diseases and increasing consumption of health services.[1]

Currently, the focus of health section is on the provision and promotion plan of primary health care through the health system transformation plan in the field of health which has been developed in the form of 15 national plans and 10 support projects. Empowering managers and employees of the health section in the country are the support projects of health transformation plan. Implementing this plan began in 2014 at the universities of medical sciences and developed until the end of the 11th government in the whole country.[2] Access to services should be easy, in group, integrated, using the proper technology and for all age and gender and continuous groups. The basic health service package is provided at the starting point, in a unit called the Health Base.[2]

The health-care provider must act as a multi-professional person according to the requirements of service package, and he is at the forefront of health delivery service. It was stipulated that professionals/experts with academic and professional record in the areas of family health, public health, nursing, midwifery, and disease control to become a multiprofessional individual called "family health caregiver" after a 147-h education in the areas of basic health service package. These forces pass their education course in the health education centers of the city's health networks and under the supervision of the university health deputy.[2]

On the one hand, evaluation is one of the dynamic necessities of educational system, and the lack of a continuous evaluation process in educational systems causes their stagnation.[3,4] Evaluation is the gathering of information for decision-makers with the aim of determining the competence and value of a subject, achieving better policies, operationalizing the subject, and improving the quality of performance in the subject.[5] Evaluation is implemented in educational areas to determine the quality of effectiveness and value of an educational plan or process, and its main purpose is to determine the value of educational programs and to judge the value about it in order to provide a model for practitioners of educational system to make the right decision and reforms the educational system[6,7]. The evaluation of educational performance should be by fully aware of all educational goals, including predetermined goals, achieved goals, and the goals during achievement.[8] To date, different models have been proposed for evaluation[5,8-10] and each has its own features.

One of the models that evaluate all levels, elements, and components of educational performance comprehensively and according to the appropriate quantitative and qualitative indicators is the context, input, process, and product (CIPP) model. The model was designed in the 1970s by Daniel Stufflebeam at the University of Ohio, USA. This model is formed on this belief that the most important purpose of evaluating is the improvement and reform of plan. The CIPP model has four components of evaluation, i.e., context evaluation, input evaluation, process evaluation, and product evaluation, and it is an approach that by a comprehensive view from the beginning of a plan specifies what needs to be done to the plan to be implemented successfully. This model can be a solution for management decisions and design the necessary changes in the plan.[11-12] Since private and public health caregivers have been attracted from the beginning of health transformation plan relying educations provided in the education centers, the evaluation of education of these individuals for becoming multipurposes (health care) regarding the health system transformation plan based on the CIPP model seems necessary.

Materials and Methods

This study is a descriptive and educational evaluation type based on the CIPP model in 2018, and the data were collected cross-sectionally. The statistical population included managers and experts of health deputy, managers and authorities in health networks, teachers of course, and learners of the health professionals and experts' education program for becoming multipurposes (family health care). The population in this study were managers and experts of health deputy (13 people), managers and authorities in health networks (32 people), teachers of course (251 people), and learners (1914 people). The census method was used for sampling from the first and second groups and the multistage method was used for the third and fourth groups.

The cities were divided into three districts based on the location and geographical distance. Then, eight cities were randomly selected from these three districts, and the samples were randomly selected among health caregivers and teachers in these eight cities. Sampling was performed from all covered areas because they were different in terms of facilities.

Questionnaire of this study was extracted and adapted from the questionnaire of Abdi *et al*.[13] and the questions suggested by Stufflebeam for collecting information in the CIPP model.[10] This questionnaire was investigated by the research team and their items were modified according to this research, and the main evaluation questions in each domain of CIPP model were designed according to the principles of CIPP evaluation model. The first part of the questionnaire included demographic information such as closed or short answer questions. The second section was designed in 4 areas: CIPP and included questions that were classified into five ranks of very low, low, medium, high, and very high using the Likert scale, scores of 1–5 were allocated to each scale. The number of questions of questionnaire for province's managers and experts was 70, for managers 75, for teachers 74, and for health caregivers 66 questions. The questionnaire was given to 5 medical education specialists and 4 experts involved in education program of health caregivers to evaluate the content validity of the questionnaire, and content validity was confirmed. The questionnaire was given to 8 caregivers, 6 teachers, 5 managers, and 1 expert for the face validity of the questionnaire to complete it and announce their comments. Finally, final changes were applied and questionnaires were prepared according to the received comments. Reliability was calculated using Cronbach's alpha coefficient for province managers and experts (0.73), city managers (0.79), teachers (0.85), and health caregivers (0.81), respectively. The evaluation checklist of facilities and equipment consisted of four sections containing multiple-option questions divided into three desirable, relatively desirable, and undesirable ranks, score of 1–3 was allocated to it, respectively.

After confirming the research council and obtaining the necessary permits from the Faculty of Health and Research Deputy of Isfahan University of Medical Sciences, the researcher referred to the research environments for data collection. After referring to the health networks, the researcher explained the purpose of the research and the way of conducting it in person for the managers of health deputy and the questionnaire was given to them by E-mail or in person by receiving permit and gaining consent from him. In order to distribute the questionnaire among the health caregivers, a meeting was held to explain the goals of the research and the questionnaire and their consent was obtained. Questionnaires were distributed to each city's managers to distribute, collect, and send. It was explained for experts of health deputy in person, and the questionnaires were delivered with their consent. All samples were given 2 weeks to complete the questionnaire and cases that were not received were followed by E-mail and telephone, and 1 more week was given. The educational facilities and equipment of each city were examined in person by a researcher using a checklist.

Data were analyzed using SPSS version 23(IBM Corp, Armonk, NY, USA) software and descriptive statistics (frequency, mean, and standard deviation). If the score of the question was in the range of 1–2.33, the index was evaluated undesirable, between 2.34 ± 3.66, it was evaluated semi-desirable, and between 3.67 ± 5, it was evaluated desirable. The researcher by presenting letter referred to the research environment and explained about the research objectives and the confidentiality of information to the research units. Correspondence was taken place with the research environment, and the necessary licenses were obtained. Participants participated in the study voluntarily.

Results

The highest percentage of female managers and experts (84.6%) was with master's degree (38.5), the highest percentage of city female managers (53.1) with bachelor and doctoral degree (43.8), the highest percentage of female teachers (77.8) with bachelor's degree (67.6%), and the highest percentage of female health caregivers (91.9%) was private sector contract party (54.7%) and with bachelor's degree (54.3%) [Table 1].

In the field of context evaluation from the view of province's managers and experts and teachers, the index of "holding this educational course has been required" with the mean and standard deviation of 4.62 ± 0.65 and 4.39 ± 0.67; from the view of city managers, the index of "community need and health system to provide services of those who passed this course in the field of youth health" with 4.94 ± 0.98; from the view of caregivers, the index of "community need and health system to provide services of those who passed this course in the field of pregnant mothers' health" with 4.32 ± 0.8 had the highest mean; and from the view of all research units, the index of "despite specialists in different fields such as midwives or … was there any need for health care and multiprofessionals?" had the lowest mean [Tables 2-5].

As seen in the Table 2 from the view of province's managers and experts, the index "provided education had a clear emphasis on the first level service package" with mean and standard deviation of 4.46 ± 0.51had the highest mean and "private sector learners had sufficient motivation to enter this course" with 2.85 ± 0.85 had the lowest mean. As seen in Table 3 from the perspective of managers and authorities of course, "community need and health system to provide services of those who passed this course in the field of youth health" with mean and standard deviation of 4.94±0.98 had the highest mean and "public sector learners had sufficient motivation to enter this course" 2.87±1.25 had the lowest mean. As seen in Table 4 from the perspective of teachers, "holding this educational course has been required"

Table 1: Demographic characteristics of the participants in the study

Units of study	Gender		Highest percentage of education level	Mean±SD			
	Female	Male		Age	Record of services	Record of services in education	Management record
Managers and experts of province	84.6	15.4	Master's degree 38.5	45.92±5.46	20.92±5.69	15.30±5.25	14.07±7.40
Managers and authorities of course in city	53.1	46.9	Bachelor's degree 43.8 and PhD 43.8	47.25±5.51	20.90±6.4	15.60±7.11	10.39±5.22
Teachers	77.8	22.2	Bachelor's degree 67.6	41.79±5.90	18.04±6.41	12.89±6.42	-
Health caregivers	91.9	8.1	Bachelor's degree 54.7	37.74±7.57	9.46±8.54	-	-

SD=Standard deviation

Table 2: Examining indices of context, input, process, and product from the perspective of province's managers and experts

Field of evaluation	Index with the highest mean		Index with the lowest mean	
	Index	Mean±SD	Index	Mean±SD
Context	"Holding this educational course has been required"	4.62±0.65	"Despite specialists in different fields such as midwives or was there any need for health care and multiprofessionals?"	3.62±1.32
Input	"Provided education had a clear emphasis on the first level service package"	4.46±0.51	"Public sector learners had sufficient motivation to enter this course"	2.85±0.85
Process	"Evaluation of the way of teaching teachers was performed by the course manager in the city"	4.25±0.62	"Teachers participated in learners' educational decision-making (extending period, postgraduate educations, dismissal and…)	3.08±0.71
Product	"The results from evaluations of educational course were considered in future planning"	4.18±0.85	"Providing the services of health caregivers are suitable as multiprofessionals"	3.23±1.23

SD=Standard deviation

Table 3: Examining indices of context, input, process, and product from the perspective of managers and authorities of course in the city

Field of evaluation	Index with the highest mean		Index with the lowest mean	
	Index	Mean±SD	Index	Mean±SD
Context	"Community need and health system to provide services of those who passed this course in the field of youth health"	4.94±0.98	"Despite specialists in different fields such as midwives or was there any need for health care and multiprofessionals?"	3.41±1.41
Input	"Appropriate briefing meeting for expressing the goals of the course and expectations from learners were held"	4.32±0.65	"Public sector learners had sufficient motivation to enter this course"	2.87±1.25
	"Private sector learners had sufficient motivation to enter this course"	4.32±0.79		
Process	"Evaluation of the way of teaching teachers was performed by the course manager in the city"	4.41±0.66	"During the program, there was enough time to study and prepare teachers"	3.41±0.91
Product	"After completion of course, there is a relationship between learners and teachers"	4.25±0.71	"This period was able to pay attention to the learners' needs and interests fully"	3.5±0.88

SD=Standard deviation

with mean and standard deviation of 4.39±0.67 had the highest mean and "incentive policies and payroll of course executors (teachers and authorities) was well stated" 2.66±1.18 had the lowest mean. As seen in Table 5 from the perspective of health caregivers, "Community need and health system to provide services of those who passed this course in the field of youth health" with mean and standard deviation of 4.32±0.8 had the highest mean and "providing the services of health caregivers are suitable as multiprofessionals 2.58±1.41 had the lowest mean.

The results of the status of answering questions in the four domains of CIPP by the units studied are shown in Table 6.

Discussion

In context factors, province's managers and experts, city managers evaluated the educational course as favorable. in the field of input, province's managers and experts and city managers also evaluated the educational course as desirable, but teachers and health caregivers evaluated it as semi-desirable. In the field of process, province's managers and experts and city managers evaluated evaluation indices of educational course desirable and evaluated teachers and caregivers as semi-desirable. In the field of product, province's managers and experts, teachers, and health caregivers evaluated indices semi-desirable and city managers evaluated evaluation

Table 4: Examining indices of context, input, process, and product from the perspective of teachers

Field of evaluation	Index with the highest mean		Index with the lowest mean	
	Index	Mean±SD	Index	Mean±SD
Context	"Holding this educational course has been required"	4.39±0.67	"Despite specialists in different fields such as midwives or was there any need for health care and multiprofessionals?"	2.87±1.37
Input	"The determined curriculum was regarding the goals of the educational course"	3.95±0.81	"Incentive policies and payroll of course executors (teachers and authorities) was well stated"	2.66±1.18
	"Selecting teachers was appropriate for this course"	3.95±0.88		
Process	"Educational materials were presented using educational equipment"	3.88±0.85	"There was the possibility for interaction and utilization of educational capacities between cities"	3.21±1.29
Product	"After completion of course, there is a relationship between learners and teachers"	3.99±0.94	"Providing the services of health caregivers are suitable as multiprofessionals"	2.90±1.35

SD=Standard deviation

Table 5: Examining indices of context, input, process, and product from the perspective of health caregivers

Field of evaluation	Index with the highest mean		Index with the lowest mean	
	Index	Mean±SD	Index	Mean±SD
Context	"Community need and health system to provide services of those who passed this course in the field of youth health"	4.32±0.8	"Despite specialists in different fields such as midwives or was there any need for health care and multiprofessionals?"	2.9±1.41
Input	"The determined curriculum regarding the goals of the educational course"	3.74±0.8	"Facilities and amenities was appropriate"	2.95±1.35
Process	"Evaluation of the way of teaching teachers was performed by the course manager in the city"	3.68±0.9	"Appropriate strategies were used to motivate learners"	3.24±1.03
Product	"Holding this course changed the attitude and created the commitment and sense of responsibility of learners to provide health services to the community"	3.60±0.91	"Providing the services of health caregivers are suitable as multiprofessionals"	2.58±1.41

SD=Standard deviation

indices desirable. Rezapour Mirasal *et al*. showed that both faculty members and students in all four dimensions of CIPP reported educational performance of university at a desirable level.[14]

In Abdi *et al*. study, most department managers, professors, graduates, and students evaluated the status of indices of evaluating reproductive health PhD in the field of context desirable. The most department managers, graduates, and students evaluated the status of indices of evaluation in the field of input semi-desirable, but professors evaluated it desirable. The most number of professors, graduates, and students evaluated the status of indices of evaluation in the field of process semi-desirable, but department managers evaluated it desirable. The greatest number of department managers, professors, and students evaluated the status of indices in the field of product semi-desirable, but half of the graduates evaluated the status desirable and semi-desirable.[13] Gall concludes in his research that students were not very satisfied in the field of process.[15] Mohebbi showed that all four fields of context, input, process, and output were relatively desirable.[16]

The results of evaluation indices of this education program showed that there was the need for holding this educational course and its objectives were appropriate to the first-level service package, but their multiprofessionals are not essential despite experts in different fields such as midwifery or … and academic education program is needed to be promoted according to health system plans. The results of this study indicate the nonsatisfaction of participants in the study from providing of health-care services in a multiprofessional manner and indicate an inadequate incentive of public health caregivers to participate in this course. In a study, Kabir *et al*. showed that the educational needs of health caregivers are high that part of it is due to the inadequate academic educations. Another reason is to delegate some of the tasks to health caregivers who do not have adequate academic education. The educational needs of health caregivers indicate that academic education is not responsive to today's job needs so much, and the health system should design and implement extensive education programs to meet the perceived needs.[17] A study in Iran confirmed that the theoretical courses offered at the university provide only 31.6% and the clinical and training courses only provide 38.7% of the students' educational needs in the related work environment.[18] In a survey in Karachi, Pakistan, students' dissatisfaction from education in clinical and public health sections was estimated between 38% and 85%.[19]

Evaluation of this educational course with CIPP model with a complete questionnaire and usability of the results

Table 6: Mean of questions and status of educational program evaluation indicators in context, input, process, and product fields from the perspective of the units under study

Units of study		Questions Number of questions (%)			
Status	Field	Managers and experts of province	City managers	Teachers	Health caregivers
Undesirable (1-2.33)	Context	0	0	0	0
	Input	0	0	0	0
	Process	0	0	0	0
	Product	0	0	0	0
Semi-desirable (2.34-3.66)	Context	1 (5)	0	1 (5)	4 (20)
	Input	8 (40)	6 (30)	15 (78.95)	15 (88.24)
	Process	5 (26.37)	8 (33.33)	16 (66.67)	17 (94.4)
	Product	7 (63.63)	3 (27.27)	9 (81.81)	11 (100)
Desirable (3.67-5)	Context	19 (95)	20 (100)	19 (95)	16 (80)
	Input	12 (60)	14 (70)	4 (21.05)	2 (11.76)
	Process	14 (73.68)	16 (66.67)	8 (33.33)	1 (5.6)
	Product	4 (36.36)	8 (72.72)	2 (18.18)	0

of it to review, correct, and improve the course is the strength points of this study. The diversity of sampling from teachers, managers, and caregivers; the limitation of access to these individuals; and the geographical dispersion were the study's limitations, and because of the high number of questions of questionnaire, its completion was faced with challenge. This study shows that it should be attempted to reform and improve indices that lead to semi-desirable situation of this period and continuing the process of evaluation is essential. It is suggested that health-care education should be performed in the university and individuals should be trained in a multiprofessional's manner and passed their academic course from the beginning with this purpose in order to increase the motivation of health caregivers. The initial service education course of health caregivers should be promoted appropriately with their theoretical and practical needs and the attitude of managers, experts, and health caregivers toward providing services of health caregivers to be improved as multiprofessionals. According to the theoretical foundations and gaps in the current research and regarding the need to evaluate the effectiveness of courses and the extent of the topic, it is recommended that researchers and students conduct more research in this field.

Conclusion

Holding the initial service education course of health caregivers has been required, and the public health, family, and midwifery disciplines in the university need to be trained appropriate to the description of tasks of health caregivers.

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Conflicts of interest

There are no conflicts of interest.

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