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Needs assessment of the public health curriculum based on the first-level health services package in Isfahan University of Medical Sciences

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Abstract:

INTRODUCTION: After graduation, public health students should be able to work as health care givers providing first-level health care services. Therefore, the educational objectives of public health bachelor's programs should ensure that they acquire the capabilities necessary for this purpose. This study identified the educational objectives that are essential for these students and compared them with the current curriculum in Isfahan, Iran.

METHODS: This needs assessment study was conducted in two phases. In the first phase, the essential educational objectives were identified using a qualitative approach, which involved eight focus group discussions held by a group consisting of experts of the public health headquarters and public health network administration offices of Isfahan province and the public health graduates working in the province's comprehensive health service centers, who were chosen using the purposive sampling method ($n = 59$). In the second phase, a comparative study was performed by turning the list of essential educational objectives into a checklist and using it to compare these objectives with the objectives in the current course plan in the examined curriculum. In the end, a list of educational objectives not included in the current curriculum of the public health bachelor's program was created.

RESULTS: The focus group discussions produced 433 educational objectives in the cognitive domain, 79 objectives in the affective domain, and 179 objectives in the psychomotor domain, which were arranged in eight competency categories. Comparison of the essential educational objectives with the current curriculum showed that the current curriculum does not cover any of the essential objectives regarding care for the age groups of 18–29 and 30–59 and the first aid and only partially covers essential objectives in other competency categories.

CONCLUSION: This study found that considering the requirements of first-level health services and the tasks expected from public health graduates to be providing these services, the current curriculum does not cover all essential learning objectives and should be revised to meet additional essential educational objectives.

Keywords:

Curriculum, educational objectives, health care worker, job description, needs assessment, public health, service package

Introduction

According to many Iranian and international experts, Iran has one of the world's most extensive systems of primary health care (PHC). This system

came into being almost 30 years ago in the form of a plan with four principles and eight components to be implemented in the framework of the country's existing health-care networks and ended up revolutionizing the Iranian health-care system. In 2005, the programs called the

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family physician and rural insurance were introduced to this system to ensure the fair delivery of health services to rural areas. The purpose of these programs was to provide comprehensive health services to rural and nomadic populations and cities with <20,000 people.^[1] In 2014, the family physician program was also implemented in urban areas to deliver fairly distributed health services to larger sections of the Iranian population. The first step of this program was to train the health-care workers who were going to be instrumental in providing the considered service packages in the second step.^[2] The first level of these services covers the entire population in the categories of infants and children, adolescents, young adults, middle-aged adults, elderly, and pregnant and lactating women, and it should be delivered in the family setting, public setting, and group setting (to the target groups).

Considering the requirements of the service packages, the health-care workers who provide these services in the public health facilities need to have a multidisciplinary training enabling them to deliver the services in a leveled, active, comprehensive, and integrated manner in the shortest possible time and at reasonably low prices. Therefore, the program named “provision and expansion of primary healthcare in urban and suburban areas” set out the rules for the use of “health care givers” as multidisciplinary health-care workers in the Iranian public health facilities.^[3] It was also decided that family health care givers should be hired from among people with associate’s or bachelor’s degrees who have academic and professional experience in the fields of family health, public health, midwifery, and disease control.^[2]

Since public health services in Iran are provided in an integrated manner, the people trained for working in this area must have the necessary knowledge, skills, capabilities, and attitudes to play a multidisciplinary role. This highlights the importance of the inclusion of appropriate courses and curriculums in the education of these people.^[4]

When designing a curriculum, educators must first determine what do learners need to achieve in terms of knowledge, attitude, and skill, and what exactly are the learning needs of these people?^[5] The first step in determining these learning needs is to define a logical rationale for choosing what needs to consider. Once the learning needs have been identified, the objectives and content of the curriculum should be determined. In this step, great care should be taken to ensure that content delivery and evaluation actually leads to learners acquiring all the targeted skills.^[6]

The review of the literature shows that there have been some studies on the consistency of the content of the courses

taught in Iranian universities and other education centers with the needs of public health occupations. These studies have reported that the public health education courses in Iran typically fail to meet the needs of related occupations,^[7] and given the poor quality of family health services in Iran, the contents of courses related to this area are also in need of a full revision.^[8] These studies have recommended more research on this issue with the purpose of modifying these courses and the contents they cover.^[7,8]

In a study on the students of nursing, midwifery, anesthesia, operating room, and public health, it was shown that the theoretical courses offered at the university were meeting only 31.6% and the clinical and apprenticeship courses were meeting only 38.7% of their educational needs. Furthermore, 46.5% of the students believed that theoretical courses do not meet their educational and employment needs and 37.4% of them had the same opinion about clinical-practical courses.^[9]

Since the authors found no study on the educational objectives in the training of health care givers in Iran, this study was conducted with the purpose of determining the skills and capabilities that students must acquire to provide first-level health services and the degree to which the current public health curriculum in the Isfahan University of Medical Sciences meets this objective. In the end, the paper provides some suggestions for improving the examined curriculum.

Methods

This needs assessment study was conducted in Isfahan province, Iran, in 2018. The study was carried out in two phases: (1) a qualitative consensus-centered phase and (2) a comparative study. In the first phase, the purposive sampling method was used to choose 59 experts from among the experts of the public health headquarters and public health network administration offices of Isfahan province and also the public health graduates working in the province’s comprehensive health service centers as representatives of ranks and file health care givers. Members of the focus group were selected with the intension of maximizing the information they bring to the group and having at least one specialist for each task. Sampling continued until the educational objectives needed for each task were determined. The inclusion criterion for public health graduates working in comprehensive health service centers was at least 2 years of work experience as a health care giver. For the experts selected from the province’s public health headquarters and public health network administration offices, the inclusion criterion was at least 2 years of work experience as the advising expert in one of the health programs dedicated to children, adolescents, young adults, middle-aged adults, elderly, maternal

health, healthy fertility, environmental and occupational health, disasters, communicable and noncommunicable diseases, health education and promotion, statistics, mental health, community nutrition, and health network development. The participants were assigned to different task categories based on their expertise and interest. The persons who were unable or unwilling to continue participating in the study or transferred out of the area of responsibility of Isfahan University of Medical Sciences were excluded from the study. Overall, eight focus group discussions were held to identify the educational objectives that will benefit health care givers in their occupation.

The people selected for the groups included 15 people from Najafabad public health network office, 9 from Mobarakeh public health network office, and 16 from Falavarjan public health network office; 17 people from the province’s public health headquarter, and two health care givers working in the public health centers of Falavarjan (a total of 59 people). The meetings were held in two stages. In the first stage, six meetings were held with the attendance of the health experts of Falavarjan, Mobarakeh, and Najafabad public health offices and the two public health graduates working in comprehensive health service centers (as representatives of rank and file health care givers). In the second stage, two meetings were held with the attendance of health experts of the province’s health headquarter. Each meeting was attended by 8–9 participants, one facilitator, and one notetaker. The groups were created to be as homogeneous as possible in terms of members’ field of education. The discussions of participants were recorded with their consent.

Before the formation of the focus group, the authors created a draft of educational objectives for each task in cognitive, affective, and psychomotor domains, based on the requirements of the first-level health service package. At the beginning of each session, participants were given a list of tasks required from health care givers and the prepared draft of educational objectives and were asked to discuss and change these objectives or add new ones if needed. The overlapping services and similar educational objectives were removed to avoid duplication, and a pruned list of objectives was prepared. The obtained objectives were arranged into eight competency categories by the authors.

For the second phase of the research, which was a comparative study, the authors created a checklist of all the identified educational objectives in cognitive, affective, and psychomotor domains. Then, the curriculum was instructed to the university by the relevant authorities and the plan of public health courses, which has been designed and implemented by the

professors of the Isfahan University of Medical Sciences, was obtained from the public health faculty of this university. The authors then compared the educational objectives in the current curriculum with the prepared checklist of essential educational objectives. At this stage, the checklist was also given to a senior student and a newly graduated student of public health, who, after receiving sufficient explanation about the purpose of the research and the checklist, were asked to carefully study the items of the checklist and report whether the current curriculum meets each objective by answering “yes” or “no.” The completed checklist was received through e-mail. In the end, the checklists completed by the students and the authors were examined to identify the objectives that are not covered by the current curriculum of public health education.

Results

The outcome of the first phase of the study was the identification of eight competency categories that are necessary for health care givers who provide first-level health services and 433 educational objectives in the cognitive domain, 79 educational objectives in the affective domain, and 179 educational objectives in the skill domain that are necessary for the training of these health-care workers [Table 1].

Given the requirements of the first-level health services, 182 cognitive objectives, 38 affective objectives, and 84 skill objectives were placed in the “periodic evaluation, classification, and referral” competency category. The syllabuses included in this category were as follows:

Assessment of signs and symptoms of health threats in children, health assessment of lactating mothers, assessment of child growth and development (children and adolescents), assessment of oral and dental health (children, adolescents, and young adults), assessment of vision and hearing (children and adolescents), assessment of skin and hair condition (adolescents), assessment of nutrition (all age groups), assessment of physical activity (adolescents, young adults, and middle-aged

Table 1: Capabilities necessary for health care givers to provide first-class health services

<i>n</i>	Competency
1	Periodic evaluation, classification, and referral
2	Prevention and treatment measures
3	Communication skills and the ability to provide counseling and health education
4	Follow-up and monitoring
5	First aid
6	Management of environmental factors affecting health
7	System-based functions
8	Reporting and documentation

adults), assessment of cardiovascular health (all age groups), assessment of noncommunicable pulmonary diseases/asthma (all age groups), assessment of infectious diseases including tuberculosis (adolescents, young adults, and middle-aged adults), hepatitis, and sexually transmitted diseases (young adults), assessment of mental health and detection of substance abuse (adolescents, young adults, and middle-aged adults), detection of genetic issues (children and young adults), assessment of health courses in schools, risk assessment (middle-aged adults and elderly) and screening (children, middle-aged adults, and elderly), imbalance and falling risk assessment (elderly), prepregnancy, pregnancy and postpartum assessments, assessment of childbearing condition, active screening, identification of healthy and unhealthy people, and detection of cases that need to be referred.

Based on the requirements of the first-level health services, 34 cognitive objectives, 10 affective objectives, and 8 psychomotor objectives were placed in the "prevention and treatment measures" competency category. In this category, the syllabuses included: vaccination, supplementation, brushing/finger-brushing instruction, varnish treatment, RhoGAM[®] injection, syndromic treatment of sexually transmitted diseases and tuberculosis, and principles of designing and implementing self-care program.

Overall, 12 cognitive objectives, 5 affective objectives, and 5 psychomotor objectives were placed in the competency category named "communication skills and the ability to provide counseling and health education." The syllabuses in this category are features of effective communication, barriers of effective communication, communication steps and dos- and don'ts, principles and steps of counseling, counseling using the SOC (stage of change) method, steps and principles of educational planning, health promotion intervention program design, teaching, and feedback collection methods.

Given the requirements of the first-level health services, 23 cognitive objectives, 2 affective objectives, and 7 psychomotor objectives were placed in the "follow-up and monitoring" competency category. The syllabuses included in this category are monitoring and follow-up for the children with growth and development disorders, breastfeeding problems in infants, health problems of breastfeeding mothers, poor eating patterns and physical activity, oral and dental problems, development of tuberculosis, asthma and jaundice, hearing and vision disorders, scabies and lice, mental health problems and substance abuse, hypertension risk, risk of genetic diseases in young people, sexually transmitted diseases, risk assessment, positive screening, falling risk in the elderly, continuation of common complaints and

occurrence of rare side effects and warning signs in the users of contraception methods, detection of risk signs and symptoms of abnormal pregnancy and postpartum including previous pregnancy problems, shock and awareness disorder, seizures, spotting and bleeding, severe or acute abdominal pain, prelabor rupture, abdominal and lateral pain, unilateral swelling and pain in the leg and thigh, severe or bloody vomiting, abnormally high pulse or respiration rate, fever, direct blow to the abdomen and pelvis, excessive weight gain, foul-smelling vaginal discharge, itching and burning of the genitals, Gradually increasing blood pressure, severe paleness, itching and rash, swelling of the hands and face, too small or large uterine height for gestational age, not hearing fetal heartbeat, breathing difficulties, urination and defecation problems, breast abscess, mastitis, uterine enlargement, detection of painful mass or purulent discharge and swelling at the incision site after cesarean section or episiotomy, underlying diseases, hemorrhoids, gestational diabetes, history of preeclampsia, infectious diseases, and monthly monitoring and follow-up care for high-risk couples and people with thalassemia and hemophilia care program.

Based on the requirements of the first-level health services, 31 cognitive objectives, 7 affective objectives, and 8 psychomotor objectives were placed in the "first aid" competency category. The syllabuses included in this category were generalities, assessment of the injured, vital signs, basic vital support, bleeding, shock and primary care, triage, and how to use the oxygen capsule.

Overall, 53 cognitive objectives, 8 affective objectives, and 3 psychomotor objectives were placed in the competency category called "management of environmental factors affecting health." The syllabuses in this category are community environmental health management, disaster risk management, health risk factor management, geography and population identification, health statistics collection tools, and health indicators and their analysis.

The syllabuses in the "system-based functions" competency category in which we placed 59 cognitive objectives and three affective objectives were the Iranian health system and how it provides PHC, structure and functions of the health system, and the health management in the family physician program.

Based on the requirements of the first-level health services, 39 cognitive objectives, 6 affective objectives, and 64 psychomotor objectives were placed in the "reporting and documentation" competency category. The syllabuses included in this category are how to register services in the system, related forms and documents, how to get reports from the system integrated Behdasht (Iranian integrated health registry),

and how to create a report for the SIB system and reporting method.

After comparing the obtained objectives and syllabuses with the curriculum currently being used in the public health bachelor's program at Isfahan University of Medical Sciences, it was found that the current curriculum does not include 11 of these essential syllabuses [Table 2].

Discussion

This study aimed to determine the capabilities expected from health care givers providing first-level health services and the educational objectives that are necessary to achieve these capabilities and to compare them with the current curriculum used in the education of these people. This comparison revealed that some of the objectives that are essential for the training of these health-care workers are not met in the current curriculum and course plan of the public health bachelor's program. The capabilities whose objectives are not included in the current curriculum at all include the ability to perform assessment, classification and referral and prevention and treatment and follow-up and monitoring tasks for young adults (18–29 years old) and middle-aged adults (30–59 years old) and the ability to perform first aid. The capabilities for which some objectives have been neglected include the ability to perform assessment, classification and referral for children and adolescents (5–18 years old) and the elderly (>60 years old), the communication, counseling and health

education skills, the ability to manage environmental factors affecting health, the ability to use system-based functions, and the ability to register forms and documents and use the SIB system to get or submit reports.

In a 2018 article published by the UNESCO, the duties defined for public health workers include first aid, water treatment, sewage improvement, and health education, which are consistent with the tasks identified in the present study.^[10] The findings of the present study are also consistent with the report of a study by Kabir *et al.*, which showed that health-care providers have a wide range of educational needs including those related to needs assessment and educational planning, prevention measures, and preparedness for disasters.^[11]

A study by Rezaei *et al.* (2014) at the Isfahan University of Medical Sciences showed that programs included in Iran's health system for children, mothers, family planning, adolescents, youth, middle aged, and elderly have many problems, one of which is the graduates of associate's and bachelor's programs not having the necessary professional, planning, research, and educational skills to analyze family health problems. This is consistent with the results of the present study regarding the programs dedicated to children, adolescents, young and middle-aged adults, and the elderly.^[12] A study carried out by Esmaeil Motlagh, *et al.* (2016) at the Iran University of Medical Sciences reported that periodic examinations, vaccinations, and prevention of violent behaviors, unsafe sexual behavior and AIDS, and addiction and smoking are the top priorities of PHC

Table 2: The essential syllabuses not included in the curriculum of the public health bachelor's program

n	Syllabuses
1	Periodic assessment, classification and referral for children including: Assessment of child vision and hearing, detection of child abuse, detection genetic problems in children, assessment and identification of potential asthma cases, screening in children
2	Periodic assessment, classification and referral for the age group of 5- 18 years including: Hypertension risk monitoring, assessment of social and mental health, assessment and identification of potential asthma cases, detection and treatment of smoking, alcohol and substance use disorders, assessment of health courses in schools
3	Providing care for the age group of 18- 29 years including: Periodic evaluation, classification and referral, prevention and treatment measures, follow-up and monitoring
4	Providing care for the age group of 30- 59 years including: Periodic evaluation, classification and referral, prevention and treatment measures, follow-up and monitoring
5	Periodic assessment, classification and referral for the age group of >60 years including: Prevention and control of blood lipid disorders
6	Principles of designing and implementing self-care programs
7	Communication skills, counseling and health education including: Counseling using the SOC(stage of change) method
8	First aid
9	Management of environmental factors affecting health including: Community environment health management (cooperation in monitoring and control of water and sewage, cooperation in monitoring and control of air pollution, monitoring and control of environmental factors, cooperation in preventing epidemics and common, new and reemerging diseases and public monitoring, monitoring and improvement of household food safety and health, household hygiene vis-à-vis radiation from artificial (radiation-generating appliances, etc.) and natural sources (radon gas, sunlight), providing public, community-centered, group-centered, and family-centered health management education, disaster risk management, health risk management
10	System-based functions including structure and functions of the health system, health management in the family physician program
11	Reporting, report collection and documentation in the programs covering children and age groups of 5- 18, 18- 29, 30- 59, and >60, healthy reproduction, maternal health, principles of design and implementation of self-care program, community environmental health management, and disaster risk management

for young people, which is in agreement with the results of the present study.^[13] In a study by Grimm *et al.* (2012), planning skills, communication skills, and public health knowledge were rated among the eight essential features for public health workers.^[14]

A study by Shirjang *et al.* (2011) at the Tabriz University of Medical Sciences also showed that bachelor's degree in public health has moderate applicability in work environments and graduates have moderate satisfaction with the curriculum of this program, but since moderate applicability is not good enough for the specialized courses, the contents and syllabuses of these courses in the public health bachelor's program should be reviewed and supplemented with practical contents such as infusion techniques, which is in line with the results of the present research. This study also showed that nearly 72% of the contents presented in the courses of the public health bachelor's program are at the knowledge presentation level and make little change in attitudes and behaviors of students.^[7] In their research at the Isfahan University of Medical Sciences, Yamani *et al.* (2013) stated that since a large section of the Iranian population is still young, the problems of adolescents and young adults, such as reproduction issues, are among the top priorities of Iranian public health, and the current curriculums for medical, midwifery, and public health programs and other related fields should be modified to address the needs identified in that research.^[15]

The strength of the present study was the use of inputs collected from rank and file health care givers as well as experts working in provincial public health headquarters in Isfahan and branch offices in other cities to determine the educational needs of people to be providing first-level health services. One of the limitations of this study was the lack of access to the course plans of all public health professors at the Isfahan University of Medical Sciences.

Conclusion

The results of this study showed that some of the educational objectives that are essential for providing first-level health services and the capabilities expected from public health workers working in this field are not completely covered in the current curriculum of the public health bachelor's program at the Isfahan University of Medical Sciences and therefore should be included in the revision of this curriculum. To complement this needs assessment, future studies are recommended to further investigate the educational needs of health care givers who are currently working in the public health system to make sure that revised educational objectives also take into account the perceived needs of these people. The results of this study can be used as a guideline for revising the curriculum of the public health bachelor's

program and also inform health education officials and professors about the current state of affairs and the existing educational gaps in this field. The results can be also used by the relevant officials to develop an in-service training program for health care givers to be providing first-level health services.

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Conflicts of interest

There are no conflicts of interest.

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