Essential core competencies for health policy doctoral graduates

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Abstract

Background: In the health sector, competency-based education focuses on the desired performance characteristics of health professionals through designing and implementing the evidence-based standards, performance indicators and, quality outcomes. This paper aims to explore core competencies required for health policy graduates, aiming to prepare doctoral students for a spectrum of future roles, i.e. academic and non-academic.

Methods: The databases including PubMed, Scopus, Google scholar, and SID were searched to identify the required competencies for health policy students worldwide. Students and well-known academics in the field of health policy (from Iran and other countries) were interviewed. This qualitative study was conducted in three phases: a critical review of literature; interviews; and validation of identified competencies through face to face consultations with experts complemented by a survey. We used three methods for data collection: 1) review of the literature; 2) 74 face to face and email-based semi-structured interviews and 3) validating the identified competencies through face to face consultations with qualified experts.

Results: We identified five core competencies for health policy doctoral graduates without specific order including research, policy analysis, education, decision making, and communication.

Conclusions: As countries are gearing up towards sustainable development goals (SDGs), the role of health policy graduates is crucial paving the pathway towards SDGs on health and well-being. Appropriate and contextually-tailored curriculum is pivotal, we envisage, to foster multi-dimensional competencies that are complementary to the specific disciplines of health policy scholars of future, those who can genuinely serve their health systems towards sustainable health development.

Background

Health policy is a multidisciplinary field that investigates the courses of activities with health implications, generally planned or taken by governments[1]. In the course of the last three decades, an increasing number of universities worldwide have been offering the doctoral program in health policy. The overall aim of these programs has been developing the specialized skills and expertise for research and teaching careers in academia, as well as in public and private sector organizations. While most conventional programs provide students with tacit knowledge about the theoretical and empirical approaches competency-based training has recently received increasing attention by educational planning experts [2, 3] Such an approach encompasses the key elements of core competencies, designing curricula and teaching programs and developing clear, reliable, valid, and defendable assessment tools. Ideally, designing a clear outline of core competencies is critical to ensure alignment of curricular content to the competencies, objectives, and assessments [4].

Some guidelines are useful for developing an appropriate educational program. For instance, the Leadership Competency Framework by the National Public Health Leadership Development Network [5] is

a useful guideline to develop and improve the program; identify competencies and educational contents; develop needs assessments, baseline and, performance standards; and evaluate educational outcomes. The framework is refined and evaluated regularly to maintain its relevance towards performance. Suggested competencies include transformation, legislation, and politics, organization, plus team and, group dynamics. Society-based educational programs that are characterized to be the core for the 3rd generation universities can be realized by integrating materials and, skills from various perspectives [6]. Nonetheless; it might be difficult for students to select the necessary curriculum from the required range of skills and techniques endorsed in interdisciplinary programs [7, 8]. Core competencies are a set of the necessary practical knowledge, skills and, techniques that empower students and other trainers for performing the given responsibilities in an effective manner [9]. In the health sector, competency-based education focuses on the desired performance characteristics of health professionals through designing and implementing the evidence-based standards, performance indicators and, quality outcomes. Reaching a status quo requires the review of existing programs, and shifting from traditional approaches to novel approaches and new education [10]. Yet, little attention has been given to the modification of the higher education curriculum in several countries, including Iran [11, 12]. This has renewed the importance of an advanced education curriculum to improve the educational system especially at the higher level i.e. in the field of health policy and health services research [13]. Competency-based frameworks have been developed as a practical assessment tool, and a basis for assessment of the curricula [14, 15]. Competencies are important for professional education because they recognize certain outcome expectations for graduates about the health system needs [16]. The process of developing competency varies, depending on the availability or absence of relevant pre-existing frameworks [17, 18], as well as the nature and purpose of the competencies [19]. Typically, relevant literature and existing competencies are studied to provide a basis for new competency frameworks [20, 21]. Various methods can be used for the competency development process, including a consensus constructing approach, Delphi techniques [22, 23], the input of qualified experts, comprehensive consultation with stakeholders through, for example, the use of a world café design [24].

Contextualization is crucial in developing a constructivist competency-based approach to education. This is more relevant in interdisciplinary subjects like health policy; where the dilemma is about choosing the courses that can help students for improving their level of competency and skills [1]. Strategies such as situation-based group learning are applied to adapt the learners' development of the inner resources that are necessary to integrate competencies [25]. Prioritization of educational needs can help to improve the effectiveness of students' curriculum, especially when educational contents are consistently identified by stakeholders from various disciplines [26]. Some scholars recommend that the educational content of health-related disciplines to be reviewed to ensure it responds to the societal health needs [27]. Besides, given the rapid changes in health sciences and the need to improve the competency of graduates, institutions must run up-to-date courses. Let alone, the multifaceted and complex nature of health challenges and the integral role of health in the SDG agenda [28] demand training enough experts with up-to-date skills and customized expertise and experience of interrelated disciplines, should we aim to reach inclusive impact [29].

The first health policy curriculum in Iran was developed over a decade ago by a group of scholars, all of them graduated from pioneer universities in the United Kingdom. It was a 4 to 5 years Ph.D. program- which required students to complete a minimum of 68 core credit courses including Health Economics, Health Policy Analysis, Public Policy, Basic and Advanced Research Methods, Qualitative Research Methodology, Economic Assessment, Health Policy Seminar, Global Health, and Health Financing. Extra courses were added to the list depending on the background and the students' needs. Students' intake was from various backgrounds including nursing, medicine, midwifery, health education, social welfare and rehabilitation, health services management, and other management and paramedical sciences. The doctoral program was firstly initiated at the School of Public Health- Tehran University of Medical Sciences and School of Management and Medical Informatics-Iran University of Medical Sciences. Two other medical universities (Tabriz and Kerman) joined the league at the later stages.

According to our searches, no previous study has investigated the required core competencies for health policy scholars of the future. This study aims to explore the skills and competencies required for health policy graduates. Our findings can help, we envisage, policy-makers and educational planners in higher education institutions develop competency-based health policy curricula, to respond to the emerging needs of the society along the pathway of sustainable health development in Iran, and perhaps in other settings.

Methods

This is a qualitative study that was conducted in three phases; a critical review of literature, interviews, and validation of identified competencies through face to face consultations with experts complemented by a survey.

Phase 1

First, we searched the databases including PubMed, Scopus, Google scholar, and SID to identify the required competencies for health policy students worldwide. We used some words and combinations including competency, graduate training and health Policy. In addition, we asked selected faculty members in health policy to nominate universities that offer health policy program or related disciplines globally and also we searched in Internet using search engines to find best schools with health policy programs. Johns Hopkins University, University of Kansas, and University College of Los Angles, The University of Edinburgh, university of Sydney, University of California, Imperial College London, University of Southern California, New York University, Duke University, Cornell University and University of Chicago were selected to review their education programs.

Phase 2

Using snowball approach, we purposefully identified well-known academics in the field of health policy (from Iran and other countries) that involved in developing the health-related policies, plus some current students of health policy, and conducted face-to-face or email-based interviews with them. Using an interview guide, in total, we performed 74 semi-structured interviews. See Table 1 for characteristics of interviewees. A follow-up email was also sent to the participants during three consecutive times, asking for their feedback and all of them completed the questioner. Two authors conducted the interviews using semi-structured interview guide. Interviews lasted about 50 minutes in average, were recorded and transcribed verbatim.

Finally, we categorized the core competencies within seven categories, including their associated learning objective for health policy students.

Phase 3

The reliability of the competencies was tested by two members of the research team who were independently assigned to the learning objectives (inter-observer agreement was 85%). Disagreements were adjudicated by one investigator and two core competencies were merged with others. Finally, five core competencies remained, based on which the initial set of core competencies was drafted. The draft version of the competencies and their associated learning objectives were reviewed independently by six experts from the Ministry of health and medical education, insurance organizations, Parliament, and health policy scholars. The authors revised the list accordingly and the final version of core competencies were derived by consensus, as it is presented in this manuscript.

Results

We identified five core competencies to explain the key abilities required for health policy graduates, including research, education, policy analysis, decision making, and communication. Table 2 summarizes the core competencies, secondary- competencies and required skills.

According to the interviews, there is a huge gap between researchers and decision-makers that make it difficult to have a common language for planning and performing the health-related programs.

"*I think there is need to develop a common language between researchers and policy makers. Sometimes policy makers have useful plans for implementing but they can't present their perception in a scientific language*" [Senior Health Policy maker].

The graduates are expected to identify relevant databases and also conduct a systematic search through the appropriate use of quality data relevant to policy issues while assessing the methodology and quality of research results.

"*So I can search in the internet but I wanna search in a systematic and effective way that lead me to experiences of other countries and health systems as well*" [Ministry of Health advisor].

One way to overcome the historical teacher-centered classes for postgraduate level studies is moving towards more student-oriented approaches i.e. students' involvement in educational activities and equipping them with modern teaching techniques to promote effective communication with students and other learners. Many study participants branded the classroom as a perfect symbol of the "real world" and, pointed out the importance of giving students the skills and expertise to effectively control the class as an exercise to manage public affairs in line with advances in knowledge and globalization.

"I think at this (doctorate) level, students want to receive a greater deal of critical points from their instructor as a mentor so that they can present their own perceptions about different subjects" [Faculty member].

Policy analysis is a complex competency that requires both theoretical understanding and critical assessment of the policy process, i.e. issue identification, policy formulation, the role of rules and regulations, stakeholders' analysis, implementation and evaluation of policies. Health policy graduates need to have a good understanding of public health paradigms, so be able to assess the relationship between the processes of health policies with the policies and procedures of other fields.

"*Health policy graduates have to analyze current health plans in the health system and interpret the probable consequences of the plans*" [Faculty member].

The ability to interpreting and analyzing the policies and plans can be improved through training the appropriate skills. Many policies are made without considering the different underlying factors including context, process, content, and actors. According to the interviewees, most policymakers and key decision-makers have no enough knowledge about policymaking based on various information and evidence.

Effective decision-making skill is a fundamental competency. The ability of policymakers to use recent information for making informed decisions is also essential. It was emphasized that graduate students of health policy should be able to engage stakeholders (including political and social actors) during the decision-making processes and in a timely manner.

"*Health system has different stakeholders with critical role in achieving the population health goals, so we as future graduates of health policy have to recognize the key stakeholders and communicate with them in a professional manner*"[Senior Ministry of Health officer]

The health sector has interactions with stakeholders from across multiple sectors and policymaking arenas. There must be well-established relationships (effective consultation and advocacy) within and across organizations and entities, whose actions or inactions influence health.

"*So working in a global village without effective relationship with other actors and stakeholders is not a political action, I mean connection with different entities, organizations and persons is a critical necessity of current world*"[Senior Health Insurance officer].

The current wave of globalization has deepened health threats across the borders and transformed public health to increasingly complex issues that generate considerable demand for international partnership and coordination across all levels of stakeholders. This may require robust joint efforts and good communication skills among health policy graduates, aiming to create an appropriate diplomatic response to shape the global policy environment.

Discussion

Over recent years, there has been a growing literature on Getting Research Evidence into Policy and Practice that aims to focus on policymakers' specific concerns to ensure knowledge translation and transfer [30, 31]. Although, the historical gap still exists between the researchers and policymakers on the ways to produce and use evidence-based research to support decision making [32]. One possible way to bridge the conventional gap could be empowering health policy graduates at the doctoral level to utilize research for influencing policymaking, both at the national and global levels [33].

The ability of a government to meet the health needs of its population depends largely on the competency of entities and authorities who are responsible for planning, management and continuous improvement of healthcare services [34]. Improving the knowledge and skills of healthcare providers [35] and the educational content of health-related disciplines could help meet the health needs of the society [36].

Health policy is one of the important disciplines to help reach such a goal – renewing the relevance to study the competencies of graduates pursuing health policy. Capacity building of public health managers entails competency-based education, which will, in turn, enhance the skills, expertise, and experience that are needed to address the growing and complex health challenges. In other words, creating a common language between health managers and researchers acts as a catalyzer for recognizing complicated problems and solving them.

In 2009, the Association of Schools of Public Health (ASPH) proposed a model of core competencies recommended for doctoral-level education in public health (DrPH). The team, consisting of academics and practice participants produced five core competencies covering seven domains of skills: Advocacy, Communication, Community/Cultural Orientation, Critical Analysis, Leadership, Management, Professionalism, and Ethics. They also associated findings to education in the field of public health at the doctoral-level, analysis of model presentation process and its implications, future use of the model; and challenges in introducing and implementing it within the educational environments. By this model, the ASPH seeks to stimulate public discussion about the core competencies needed by public health graduates to address public health challenges and redefine the DrPH degree in a better way [37]. According to our findings, certain universities have sufficed to general lists of core competencies that students and graduates of the field should possess. For example, core competencies of the health policy and management program at the Johns Hopkins University- USA are fairly similar to the research and educational competencies identified in our research [38] The list of core competencies of the health policy

and management program in the University of Kansas is more general [39]. Studies have also shown a significant relationship between educational content and occupational competency of higher education graduates [40] and developments of core competencies for health policy and improved population health [41] According to our study, certain competencies (research and education) were found applicable to all graduates but it seems they are more important in health policy studies because of the dynamic entity of health-related challenges in these graduates. To achieve sustainable health development, "interdisciplinary/cross-cutting competencies" are essential compared to "discipline-specific" competencies. These cross-cutting competencies include diversity and culture, professionalism, program planning, systems thinking, social and behavioral sciences, and health policy and management. Formation of the global village and the existence of people of different nationalities and cultures in every society intensifies the need to foster such competencies. It seems training these competencies will increase new and innovative plans for improving the health of the community.

Conclusions

Our study identified the five core competencies in this regard and shed light on specific aspects to prepare future scholars of health policy. Public health challenges are numerous, multi-faceted and complex, addressing them effectively requires other cross-cutting competencies (including diversity and culture, professionalism, program planning, systems thinking, social and behavioral sciences, health policy and management), most of which might not derive from the current curriculum in many universities. While most countries are gearing up towards sustainable development goals, i.e. SDG3 on health and well-being, it is imperative to foster the core competencies in health policy graduates to equip them to address the dynamic and complex nature of the policy environment along the ongoing and winding pathway towards sustainable health development.

Abbreviations

SDGs
sustainable development goals
ASPH
Association of Schools of Public Health
DrPH
doctoral-level education in public health.

Declarations

Ethical approvals:

This study was approved by the ethics committee of Tabriz University of Medical Sciences(IR.TBZMED.REC.1397.318). We obtained written consent from all participants and guaranteed them of their privacy, confidentiality and anonymity of any information they provided. Participation was voluntary. Participants were given the right to opt out from the study at any point.

Consent for publication:

Not applicable

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Authors declare they have no conflict of interests

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LD conceived and designed the study. LD, HM and MA collected and analyzed the data. AT contributed to analysis, interpretation and critically revision of the manuscript. All authors read and approved the final version of the manuscript.

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Tables

Table 1

Characteristics of interviewees

Academic Discipline		Sex		Number of participants	Organization
Other disciplines	Health policy	Female	Male		
4	2	2	4	6	Management and Planning Organization
4	1	2	3	5	Health Insurance Companies
5	2	3	4	7	Ministry of Health and Medical Education
3	7	6	4	10	Tabriz University of Medical Sciences
4	5	4	5	9	Kerman University of Medical Sciences
3	6	3	6	9	Shiraz University of Medical Sciences
3	9	5	7	12	Tehran University of Medical Sciences
2	3	1	4	5	Kashan University of Medical Sciences
1	4	2	3	5	Mazandaran University of Medical Sciences
0	6	1	5	6	Universities in other countries
29	45	29	45	74	Total

Table 2

The core competencies, -competencies and skills

Core competencies	Relevant competencies	Required skills
Research	Identification, access, and evaluation of scientific texts and providing evidence to determine research gaps in health systems	•Exploring databases and journals to retrieve relevant articles and documents. • Reviewing texts by critically appraising scientific work and determine gaps for further investigation. •Assessing status quo to identify research needs and priorities. •Developing hypotheses and appropriate interventions. •Formulating research questions relevant to health policy. •Interpreting results, and identifying strengths and limitations of research.
	Design and implementation of basic and advanced research in health policy	•Transforming research question into a well-designed study •Evaluating strengths and weaknesses of experimental, quasi-experimental, and observational studies •Ability to use advanced research methods in the design, implementation, and interpretation of independent research projects •Using applied knowledge of qualitative and quantitative paradigms in the design of research, including data collection and analysis techniques such as content analysis •Using applied knowledge of inferential and descriptive statistical analysis and its application in health-related research •Ability to prepare and analyze big data, use conceptual frameworks to conduct research related to health policy •Capability to select and implement appropriate analytical techniques from advanced epidemiological, statistical, economic, qualitative, and survey methods (e.g. structured systematic review, meta-synthesis and meta-analysis, causal models, logistic and multiple linear regression, general linear models, longitudinal and multilevel models, cost-effectiveness analysis, cost-benefit analysis, and cost-utility analysis) for a specific research question •Ability to develop and evaluate research proposals and policy summaries, interpret the results of studies related to health policy, and present findings in both research and operational contexts •Capability to determine, evaluate, and specify most appropriate sources of data for a specific research question; select valid and reliable data, analyze the validity and reliability

		of data; and collect valid and reliable qualitative and quantitative data, •Ability to use information technology, both in data gathering and analysis
	Application of ethical principles to research	•Considering social and cultural values, and prioritize the societal needs •Avoiding scientific distortion and misleading evidence in research endeavors •Observing ethical principles in treatment of subjects, to achieve research objectives
	Translation and effective presentation of research findings	•Presenting study findings, orally or in written form, to various ranges of stakeholders •Ability to publish research in peer-reviewed journals
	Identifying and examining the policies and problems	• Determine, describe, and analyze health-related problems by critically comparing and applying the theories of policy process in the study of health-related problems • Examining important health policies from a historical standpoint • Having a good understanding of public health paradigms (national and international) •Understanding the process and evolution of national health policies and how they are related to the policies of other health systems around the world
Policy Analysis		• Ability to describe the stages of the policy process, including issue identification, policy formulation, implementation, and evaluation
	Interpreting and analyzing the policies	• Determine, describe, analyze, and evaluate issues and policies related to healthcare system and public health using tools and models of policymaking and policy analysis • Identify the key sectors, institutions, and stakeholders involved in the policy process at the national, regional, and local levels • Critique the policy process, including the central role of rules, regulations, and lawsuits; the role of stakeholders; the difference between national laws and local policies; and the effect of academic research on the policy process • Capability to collect and analyze data for health policy analysis; apply ethical principles to health policymaking; extract and interpret the results of policy formulation process, identify inputs, and determine the effectiveness of agendas; determine and predict potential outcomes of health policy strategies

Education	Teaching - both theory, and practice	•Ability to perform educational needs assessment; use curriculum review models; apply teaching principles, techniques, and styles; implement teaching and learning principles; develop lesson plans and course plans; develop educational content; manage and lead educational activities; perform strategic and operational planning in education; use and develop modern technologies in education; effectively communicate and motivate learners; assess teaching performance; assess the performance of learners; evaluate curricula; manage courses and classrooms; apply concepts related to other specialized disciplines; review curricula and educational scholarships
Decision Making	Leadership & Management	• Ability to successfully manage organizations and promote public health; lead the process of determining priorities and allocating resources necessary for achieving organizational goals • Ability to interpret and aggregate the findings from qualitative and quantitative data in operational projects and programs of the organization • Ability to determine goals and objectives of programs; and use evidence to inform decision making • Considering current and future trends (financial, social, political, and health-related trends) in developing and monitoring strategic plans for the organization • Adopting methods to minimize internal and external barriers to provision of services by analyzing the barriers, and the ways forward. • Capable to select best options among policies, programs, and services; and manage programs within the boundaries of current and future budgets. • Effectively manage the implementation of policies and procedures of government agencies overseeing the organizations • Developing performance management systems • Interacting with other health-related organizations at the national, regional, and global levels • Collecting relevant information to select policy options, programs, and strategic plans • Participate in the development of new strategies and policies that help adjust or improve current policies • Developing evidence-based policies using scientific data and consider all ethical and legal considerations as well as the interests of various stakeholders • Use the results of applied research and evaluation methods to implement strategic public health and health care plans more effective

	• Develop strategic plans to improve public health (describe measurable outcomes, make decisions about necessary changes in policy, and appoint groups and individuals responsible for implementing these plans) • Ability to apply the principles of strategic planning, program development, and performance measurement to public health initiatives that utilize effective partnerships between organizations and communities • Develop policies to expand international cooperation
Evaluation	• Assess the health needs of a population and provide strategies for solving health problems at various organizational and societal levels • Use appropriate and accurate methods to predict the outcomes of health policies as well as general policies that affect health, including biological and epidemiological statistics, mathematical techniques, and simulations • Analyze key concepts such as health indicators, patient demand for healthcare services and health financing, with emphasis on the critique of the effects of alternative financing methods and organization of health care services on costs, quality, access, and public health • Evaluate the main components of the policymaking process that affect the functions of health systems, including: financing, stewardship, resource generation and delivery of healthcare services • Use proper and accurate empirical methods to evaluate the financial, political, legal, and/or geographical factors influencing health • Perform cost-effectiveness and cost-benefit analysis of innovative healthcare initiatives and public health policies • Assess the performance and composition of institutions, actors, and processes in the development of public health policies • Evaluate the role of public health policymaking at the national, regional, and international levels • Evaluate the organization and financing of public health and medical services, and critique their impact on accessibility, utility, and quality of healthcare, costs, and outcomes • Critically evaluate the effect of health policies on organization, provision, and financing of public health services • Analyze the access and utilization of healthcare services, costs, outcomes, and performance of the health system using the results of applied research

		• Analyze financial interactions within the health system and their impact on organizations and stakeholders
		• Evaluate structures, duties, powers, and responsibilities in public health organizations
		• Collect information for evaluating strategic policies and plans
		• Analyze the applications of strategic policies, plans, and programs
		• Use financial analysis methods in decision making about strategic policies, plans, and programs
		• Assess the financial, political, legal, and geographical) feasibility of policies, plans, and programs
		• Ability to identify, develop, and select strategic policies, plans, and programs; use health informatics in evaluation of strategic policies, plans, and programs; employ appropriate and accurate techniques in evaluation of policy option to recommend appropriate policy action
Communication	Consultation	•Ability to create teams to achieve strategic goals and plans; write a memorandum of understanding where goals are clearly defined; effectively communicate to promote public health; create opportunities for cooperation with different organizations with the goal of promoting public health; establish bilateral relations with stakeholders, policymakers, and related groups; interact with other health organizations at the local, regional, and international levels; cooperate with government agencies that have the power and authority to influence public health; use evidence-based models of communication and negotiation to disseminate findings; establish compelling and information-based communications with various health policy audiences and professionals; consult other health specialists and policymakers to formulate innovative public plans and programs
	Advocacy	• Capability to advocate for the use of evidence in decision making; engage in policies and programs outside the health sector; provide public health financing mechanisms; justify budgets and programs; obtain information for the formulation of contracts and agreements; negotiate contracts and agreements; explain financial analysis techniques (cost-effectiveness, cost-benefit, cost-utility, and return on capital) for strategic policies, plans, and programs.