Review Article

Comparison of nursing doctoral programs in Iran and the University of Massachusetts Boston: A comparative study

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Abstract

Background & Objective: Learning about the world's successful educational systems in the field of nursing education can be helpful in planning, especially in the doctoral program, and lead to an increase in the quality of education in this field. Therefore, the present study was conducted with the aim of a descriptive and comparative comparison of the curriculum of nursing doctoral programs in Iran and the University of Massachusetts Boston.

Materials & Methods: The present study is a descriptive-comparative study. To compare the doctoral nursing curricula of Iran and Boston Massachusetts, related articles and resources along with library studies based on Bereday's four-stage model, including description, interpretation, proximity, and comparison were analyzed.

Results: Integration of the curriculum with a focus on nurse participation in health policies, educational content related to defined roles and more emphasis on educational courses, admission of undergraduate doctoral students, the existence of part-time and full-time courses, and having the practice-focused program alongside Ph.D. were important features of Boston University curriculum. The nursing doctoral curriculum in Iran is done only full time and from master's degree and in a centralized manner. The educational courses do not meet the needs of society and the only nursing doctoral program in Iran is Ph.D.

Conclusion: Boston's nursing Ph.D. curriculum has been developed with a comprehensive view of the real perceived needs of the nursing profession and society. The results of the comparison can be useful in revising Iran's nursing Ph.D. curriculum to improve educational quality.

Keywords: Comparative Study, Nursing, Curriculum, Iran, Boston

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Introduction

Ph.D. studies are deemed as the advancement of science in every discipline (1). The professional need to produce knowledge for improved quality of care is an emphasized principle in doctoral nursing education programs (2). Doctoral education for nurses has been a growing trend across the globe. After undergraduate university education began in the 1920s to prepare professionally qualified nurses, baccalaureate nursing developed worldwide. And after that, due to the necessity of having a higher educational qualification for nursing instructors, master's and doctoral educational programs were developed (3).

The first dedicated doctoral program in nursing was started by Columbia University, New York, in 1934, and then it was gradually promoted in other universities around the world (4). In Iran, the effort to develop a doctoral program in nursing began in 1981, and finally, in 1994, the first educational program at this level was approved by the Supreme Planning Council of the Ministry of Culture and Higher Education. The

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admission of Ph.D. Nursing students started at Tabriz University of Medical Sciences in 1995 (5), and today in most universities of medical sciences in the country, students are accepted at this level with a combination of American and European education models (6).

Despite this progress in postgraduate education in nursing, the main goal, which is increasing the quality of nursing services, has not been properly considered (7). The curriculum of nursing doctoral programs in Iran has been subjected to repeated revisions; however, Aliabadi et al. (2019) pointed out the need to make changes in order to realize the developed mission, vision, and excellence of nursing (8). In the same context, Goliroshan et al. (2020) also acknowledged that the curriculum of nursing doctoral programs is not compatible with the real needs of Iranian society (9). Therefore, it is necessary to evaluate The curriculum of nursing doctoral programs, and identify strengths and weaknesses for the excellence of the nursing profession (10).

In this context, familiarization with the world's successful educational systems in the field of nursing education can be helpful in revising the nursing curriculum in the country. Due to the fact that nursing doctoral programs in Iran mostly follow the American model, one of the successful universities in nursing education that has extensive and up-to-date programs in nursing education is the University of Massachusetts Boston in the United States. The nursing doctoral program in this university focuses on the intersection of nursing policy, population health, and health-related policies (11). Taking advantage of the successful experiences of such universities can be helpful in nursing education programs, especially at the postgraduate level, and also in solving the existing deficiencies. In light of the aforementioned issues, the current study was carried out with the aim of a descriptive and comparative comparison of the curriculum of nursing doctoral programs in Iran and the University of Massachusetts Boston.

Materials & Methods

This applied research was conducted based on a descriptive comparative design and based on the Bereday model. This model consists of four stages: description, interpretation, juxtaposition, and comparison (12). In order to compare the curriculum of doctoral nursing programs in Iran and the University of Massachusetts Boston, related articles and resources, along with library studies, a query was conducted on reliable Persian and English databases, such as SID, Google Scholar, PubMed, Science Direct using the keywords of comparative study, Nursing Doctorate, Curriculum, Educational System, Iran, Boston, and Massachusetts and all related articles were included in the study.

Moreover, the curriculum of doctoral nursing programs in Iran, including the general specifications of the course, program, course headings, and the method of evaluation, approved by the 65th session of the Supreme Planning Council of Medical Sciences on 12/14/2013, was received from the website of the Ministry of Health, Treatment and Medical Education (13). The curriculum of the nursing doctoral course of the Boston School of Nursing was also obtained from a reliable site related to the University of Boston Massachusetts and translated into fluent Persian, and its various parts were carefully identified, reviewed, and analyzed (11).

In this research, considering the importance of cultural and social factors in educational planning and the need to know the context of the study, after mentioning a brief history of the nursing doctoral program in Iran and Boston College, based on the Bereday model, in the first stage, the research topic was described based on the data and evidence obtained from the collected sources. In the second step, the described data were interpreted. In the third stage, based on the description and interpretation performed in the first and second stages, the data were categorized and used as a framework for the final stage, and in the fourth stage, a comparison was made based on the research questions (14).

Results

The results obtained regarding the generalities of the two universities and the elements of the curriculum, including the definition of the field, history of the course, values, mission, vision, expected goals and capabilities, roles and responsibilities, admission conditions, and course specifications were presented in Tables 1-8 at the end of the article.

General information about the history of the nursing doctoral program in Iran

The establishment of nursing Ph.D. in Iran was discussed at the meeting of the Council for the Development of Higher Education on 28/7/1975. In 1981, the efforts to prepare the program and approve the doctoral program in the Supreme Planning Council continued, and it was approved in the 284th meeting of the Supreme Planning Council of the Ministry of Culture and Higher Education on 9/10/1994.

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In 2014, the admission of students to the nursing Ph.D. began at Tabriz University of Medical Sciences. Following that, Tarbiat Modares University in 1996(four students), Iran and Tehran Universities of Medical Sciences in 2001 (two students), Shahid Beheshti University of Medical Sciences in 2002 (two students), and finally the Isfahan University of Medical Sciences (two students) started a nursing Ph.D. program in 2003, and gradually other universities of medical sciences in Iran also accepted students (13).

General information about the history of the nursing doctoral program in the University of Massachusetts Boston.

In response to social changes and the rapidly increasing demand for higher education, the Massachusetts Legislature established the University of Massachusetts Boston in 1964.

In 1982, Boston State College was merged with this university and eliminated duplicate programs, and created momentum in the development of this university's programs until finally. This university was able to accelerate the establishment of courses, especially in the postgraduate level. During the 1980s and 1990s, more postgraduate courses, especially doctoral programs, were added to the programs of this university, and by 1995, it had 31 postgraduate degrees, with graduate students accounting for 21% of the total enrollment in this university. In this regard, the Boston School of Nursing, the ninth-largest nursing school in the United States, has exclusively established nursing education programs in Boston.

A significant number of nurses with bachelor's, master's, and Ph.D. degrees from different racial and ethnic groups graduate from this university every year. This university ranked as the best public university in New England in postgraduate programs and has become a role model for nationwide nursing education programs in this region. It should be noted that the doctoral curriculums in nursing at this university have been revised several times based on the opinions of the students and professors, and the last revision was carried out in September 2020. (11, 15).

Discussion

The present study aimed at a comparative comparison of Ph.D. in the nursing curriculum in Iran and the University of Massachusetts Boston. Based on the results, there are notable similarities and differences in the curriculum of the two countries. The definition of the nursing discipline provided by Boston represents the professional path of the graduates of this course and can be used as a model to reduce the ambiguities in the definition of the Ph.D. in the nursing curriculum. Goliroshan et al. (2020) also pointed out the stereotypical and symbolic nature of the definition of the discipline in Ph.D. in the nursing curriculum in Iran (9). Focusing on health policies and involving doctoral nursing students is included in the philosophy, goals, and even the vision of Boston in addition to the definition of the discipline.

The comparison demonstrated that this important principle has been neglected in Iran, and despite the effort to pay assiduous attention to the nursing doctoral degree and include involvement in health system policies in the general goals of the discipline, the program lacks the necessary predictions regarding the operationalization (13). Sanagoo et al. (2022) also described the goals set in nursing Ph.D. in Iran as vague and referred to the coordination between the vision and goals as an important factor in informing students of their future responsibilities (16).

To pursue the overall goal of the curriculum, we need to answer this question: have the roles assigned to nursing doctoral graduates been defined correctly? A negative answer to this question can be a warning to review plans and efforts made to achieve the considered goals. In comparison, the Boston School of Nursing has extended its focus on health policies in the roles defined for Ph.D. nurses (11). Aliabadi et al. (2019) emphasized the lack of necessary infrastructure for the outlined duties and roles of a nursing Ph.D. in Iran and noted that some of these roles become meaningful for nurses by making changes in the defined positions of nursing in the country (8). In addition, a doctoral student at Boston University, along with educational programs, can practice the role of the university's academic staff as a scientific resident (11).

A wide array of studies has emphasized the inclusion of curriculums in order to prepare students to accept the role of academic staff after graduation (8, 17). Shujaei and Vafadar (2020) have pointed to the weakness of the nursing Ph.D. curriculum in this regard (18); therefore, there is a vital need to review the roles. Doctoral studies in Iran are only possible from masters and full-time, while in Boston University, it is also possible to continue studying part-time. The nursing doctoral program in Iran only includes the Doctor of Philosophy (Ph.D.) in nursing, while in the University of Massachusetts Boston, as well as most prominent universities in the world, in recent years, along with the Ph.D., DNP (Doctor of Nursing Practice) has also been offered to

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gain advanced practice knowledge to provide safe and effective care for patients (20).

In Iran, in order to reduce the distance between theory and clinical practice, theoretical and practical credits related to clinical practice are included in the Ph.D. program. Moreover, the assessment of the considered professional roles and duties demonstrated that many of the DNP roles and duties had been integrated into the Ph.D. job description. For example, evidence-based practice, which is one of the main strategies of the DNP can be observed in the Ph.D. job description. Considering that the Ph.D. in nursing is focused on research, it should be assessed whether this revision and change are for the benefit of the nursing profession in Iran and whether the inclusion of such content is suitable for the general purpose of the nursing Ph.D.

Amanian et al. (2020) stated that due to numerous ambiguities in the addition of new courses to the previous content and not considering the necessary infrastructure, the distance between education and the bedside has not only been reduced but a new challenge has also been presented (21). The main goal of the nursing Ph.D. program is to train nursing faculty members, and it is expected that they will play a major and influential role in clinical education after graduation. Nonetheless, what is observed in the reality of nursing education in the country is that Ph.D. nursing graduates in Iran sometimes do not have the necessary competence in clinical education (20).

It seems that despite the effort to include clinical content, Ph.D. programs in Iran are not adequate, and the establishment of a DNP along with a Ph.D. will be of great help. In educational programs in Iran, despite the development of the mentioned profession, in many cases, relevant educational content cannot be found. Since the curriculum reflects the future abilities of the learners (22), a deficiency in the content of the nursing doctoral program, a job position cannot be guaranteed for graduates. Even though important and ideal roles that fit the needs of society are mentioned in the program, the content does not meet the educational needs of the mentioned roles (13).

Borzoo et al. (2016) also suggested the need to review the educational content of the nursing doctoral program (23). Another important point to consider in comparing the two curriculums is the difference between the number of educational and research credits related to the thesis in Iran and Boston. One of the common complaints in domestic studies is the dissatisfaction of doctoral nursing students with the course, and they have asserted that the determined content did not meet their educational needs (7). According to the aforementioned issues, one of the strengths of the programs of Boston university is paying attention to the fact that in this university, unlike Iran, most of the courses are educational.

In addition, another noteworthy point is that despite more educational courses, the length of study at this university is shorter compared to Iran (11). Ph.D. in nursing students in Iran spends a lot of time in research courses (13), and it seems that the condition of accepting articles in prestigious journals leads to the waste of the student's time and energy and sometimes lack of motivation (7). Inter-university cooperation in Massachusetts universities is one of the interesting points, and the universities benefit from each other's facilities in order to enrich the education provided as much as possible, and the students can spend some of their courses in other related universities (11). Considering the different scientific and educational capacities of universities, it seems that providing this possibility in Iran will help to improve the scientific level of Ph.D. in nursing students.

Limitations of the study

Despite the full access to the curriculums of doctoral programs in Iran and Boston that were available online from various university sites in Iran and Boston, a survey of the professors and students in Boston regarding the implementation of the educational programs could have provided additional information to the results of this study; nonetheless, due to the absence of studies in this field, this possibility was not provided.

Suggestions for future studies

Considering the significant results obtained from the comparison of nursing doctoral programs in Iran and Boston, paying attention to other educational programs of this university, especially in master's in nursing, can also provide useful outcomes for periodic revisions of other nursing education programs in Iran.

Conclusion

The comparison between the curriculum of nursing doctoral programs in Iran and Boston University was indicative of some significant differences. The integrity of the Boston University curriculum regarding the definition of the discipline and goals up to the thesis, with a focus on the participation of nurses in health policies, was one of the notable points that can be taken into account. Moreover, educational content related to defined roles and emphasis on educational courses is also valuable points.

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If the goal of revising the curriculum of the nursing doctoral course is to increase the satisfaction of the beneficiaries, fundamental revisions need to be conducted. It should be kept in mind that if the feedback of these changes aims at solving the issues raised in relevant studies, they will definitely be effective in the professional excellence of nursing. The establishment of DNP in the country is only based on the fact that its inclusion in leading countries in nursing education cannot be considered a solid reason for its implementation in medical sciences universities in Iran. Instead, it will need more investigations in the educational and clinical context of the country. All the articles that have compared Iran's nursing doctoral program with other countries contain valuable and useful points that should be taken into consideration by the planners of this educational level since the main goal of such comparisons is to improve the country's nursing doctoral programs, and an attempt has been made to collect the salient and practical points of prominent universities in the world.

Ethical considerations

This study has been approved by the Ethics Committee of Semnan University of Medical Sciences, Semnan, Iran (Ethics No. IR.SEMUMS.REC.1401.041).

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Conflict of interest

The authors declare that they have no conflict of interest.

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Author contributions

All the authors participated in the process of the initial writing of the manuscript, its revision, presentation of the idea and initial design, and collection and analysis of data. Moreover, all authors accept the responsibility for the accuracy and correctness of the contents of the present manuscript and approve the final version of the manuscript.

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Table 1. Definition of nursing doctoral course in Iran and University of Massachusetts Boston

University	Definition of the program
Iran	The Ph.D. in nursing is the highest level of education in this field. Graduates will be able to present their services to patients, society, and related centers as the highest scientific and professional reference in this discipline in the fields of education, research, theorizing, management of nursing services, and evaluation of their services in order to improve health (13).
Boston	A nursing doctoral program, focusing on health policy and population health, is responsible for preparing graduates to investigate population health/health policy research questions. In order to achieve the highest possible quality of life for populations, doctoral graduates in this field acquire research skills to study phenomena related to nursing activities that are necessary to promote or restore and maintain health throughout life and prevent disease (11).

Table 2. Philosophy, Mission, and Vision of Ph.D. in Nursing in Iran and University of Massachusetts Boston

University	Philosophy, Mission, and Vision
Iran	Philosophy: On the one hand, nursing deals with the health of humans as a unique and multi-dimensional entity, with physical, psychological, social, moral, and spiritual characteristics, and on the other hand, based on the Islamic value system that governs the society, it is required to respect the rights of human beings and the establishment of social justice. Therefore, we should try to realize this philosophical approach in doctoral courses by laying the groundwork for institutionalizing values, and acquiring and strengthening professional ethics through fundamental, applied qualitative studies and theoretical studies with a comprehensive and community-oriented approach. Graduates with a Ph.D. in nursing will play a role in improving the health of society. This will increase the motivation of nursing agents and improve the provision of professional services (13). Mission: Training human resources that are aware of current scientific issues, capable, responsible, have professional ethics, and are sensitive to the health of individuals and society. They provide their expertise at various levels of prevention in educational, research, and service-providing centers (13). Vision: In the next ten years, Iran will be among the top and most prominent countries in the region in terms of strategic participation in the production of knowledge and technology and the expansion of fundamental and applied research, improving the quality of nursing services, improving national standards and adapting to global standards, creating a platform for attracting efficient scientific personnel in the country and attracting foreign students (13).
Boston	Philosophy: Training health professionals to participate in creating a scientific community with a special focus on health and providing significant research, professional and social services based on the principles of honesty, diversity, transparency, transformation, flexibility, increasing relationships, responsibility, cooperation, equality, and excellence. Mission: To promote equality and quality of health in populations and policies, to create an inclusive and student-centered learning environment that strengthens innovation in research, education, and services, and to train graduates to promote equality and quality of health as professionals who work in complex systems (11). Vision: The leader and pioneer in teaching innovation in the nursing profession and achieving optimal public health at the community level through the creation and evaluation of health-related policies (11).

Table 3. The general goals of the nursing doctoral program in Iran and the University of Massachusetts Boston

University	General goals
Iran	Training of specialized personnel in the field of nursing to provide the required personnel in the fields of education, research, technology, management, and specialized nursing services Participation in health system policies (13).
Boston	Doctoral graduates at this university are prepared to achieve the results expected by the Association of American Colleges of Nursing from doctoral programs in nursing. These goals include: Development of knowledge. Supervision the discipline. Education of the next generation (11).

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Table 4. professional Roles and responsibilities of graduates in nursing doctoral programs in Iran and the University of Massachusetts Boston

	professional Roles and responsibilities of graduates
Iran	Role: • Playing a role in the fields of education, research, care, consulting, management and prevention in the society • Professional responsibilities: • Participation in the design, development, and evaluation of various educational programs • Teaching various specialized levels of nursing • Participation and cooperation in compiling and teaching in workshops and continuous and informal education programs of the participants • Patient, family, and community education • Participation in the formulation of nursing guidelines • Designing, implementing, and evaluating all kinds of research in nursing according to the needs of society • Participation in research, transfer, and translation of knowledge • Counseling of theses and dissertations of postgraduate students • Participation and cooperation in research committees in research centers • Providing professional Consultation to the audience • Need assessment of nursing services and required facilities in different fields • Planning, implementation, and evaluation of nursing services based on the nursing process • Cooperation in the care and treatment team • Follow up of clients at the community level • Cooperation in hospital committees • Identifying the deficiencies and problems of the work environment • Participation in resource allocation • Participation in planning • Participation in the provision of human resources • Participation in providing the organization's budget • Participation in the development of the program • Participation in the formulation of the strategic plan • Interprofessional learning • Evidence-based learning (13).
Boston	Graduates prepare themselves for the roles of leaders, researchers, and trainers to achieve competence in the following areas: • Analysis of historical, social, economic, political, and healthcare perspectives on population health issues and health policies. • Assessment of health policies that affect access, quality, and cost of health care delivery and nursing practice at the local and global level. • Conducting qualitative, quantitative, or mixed research guided by theories that lead to the advancement of nursing science with an emphasis on population health or health policy. • Creating innovative and evidence-based strategies to shape population health and develop health policies at the local, national, and global levels based on contemporary nursing and interdisciplinary research. • Connecting research and activities, and values in the development of one's discipline and activities as a scientist, consultant, and trainer (11).

Table 5. Registration and admission conditions in nursing doctoral programs in Iran and the University of Massachusetts Boston

University	Registration and admission conditions
Iran	In addition to meeting the general requirements, having a master's degree or higher related degrees, passing the theory test and the interview for admission to the doctoral course (13).
Boston	Having a bachelor's or master's degree depending on the type of educational level A statement from the student which specifies the academic goal. Two confirmations from experts who are aware of the individual capabilities of the student Official transcripts of academic degree CV. A copy of the nursing license (if any), a copy of the professional certificate (if any) (11).

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Table 6. Specifications and structure of the nursing doctoral program in Iran and the University of Massachusetts Boston

University	Characteristics and structure of the program
Iran	Education in the doctoral program is possible only at the Ph.D. level. Students are admitted from the master's level, and the duration of study at this level is 4.5 years (13).
Boston	It is possible to continue education in both DNP and Ph.D.. Students are admitted from two undergraduate and graduate levels. The only Post Doc course in this faculty is in collaboration with the Dana-Farber Cancer Institute, focusing on cancer-related inequalities. Doctoral studies are both full-time and part-time. Education from master's level to doctorate is full-time for three years and part-time for four years. Education from the undergraduate level is only full-time and involves four years of study (11).

Table 7. Content of Ph.D. curriculum in nursing in Iran and University of Massachusetts Boston

University	Content
Iran	The student is required to complete 45 credits, comprising of 25 educational credits and 20 research credits in line with the thesis. Required Specialized courses include 19 credits, and the rest are elective credits. Educational courses include philosophy of science and nursing (two credits), theorizing in nursing (four credits), advanced inferential statistics (two credits), management and leadership in nursing education (two credits), educational systems and planning in nursing (two credits), special topics in nursing (two credits), methodology and criticism of quantitative and qualitative studies in nursing (two credits), Methodology and criticism of combined research and instrumentation in nursing (1.5 credits), leadership management and policy-making in nursing (two credits) (13).
Boston	Full-time and part-time students are required to complete 48 credits at the master's level. 39credits (three credits each), including philosophy of nursing science, doctoral seminar, contemporary disciplinary knowledge, health policies, population health, Biostatistics, evidence-based teaching methods, qualitative research method, advanced quantitative research method or epidemiological method, concepts, and methods integrated into theory development and nine research credits related to the thesis (24). In the bachelors to doctoral course, the student is required to complete 69 credits. 60 course credits (three credits each), including biostatistics (one), health system leadership, health informatics, biostatistics (two), Health Inequalities (one), evidence-based teaching methods, philosophy of nursing science, nursing seminar, contemporary disciplinary knowledge, health policy (one), population health (one), an introduction to health policy, Economics and ethics, the mental health of the family or teacher in the academic environment, qualitative research method, advanced quantitative research method or epidemiological methods, concepts, and methods integrated into theory development, and nine credits of research related to the thesis (25). The student is able to enroll in the academic residency course (Scholar Resident) and is also required to complete various educational courses to practice the role of the academic staff, in addition to being appointed as a teaching assistant (11).

Table 8. Educational methods and techniques of the nursing doctoral program in Iran and the University of Massachusetts Boston

University	Educational methods and techniques
Iran	According to educational needs and goals and with an emphasis on student-centered methods: group discussion, problem-solving, holding educational workshops, and journal club Intra-departmental, inter-departmental, hospital, inter-discipline, and inter-university conferences and participation seminars in the education of health system learners Using simulation and distance learning techniques (13).
Boston	A combination of dependent and independent methods, holding face-to-face and remote training workshops. The student is obliged to choose the credits that he/she learns independently under the supervision of the supervisor and tries to get an acceptable score. Every year, the students must submit their progress report to the head of the department, and if they do not get the minimum acceptable score, they are obliged to go through a series of designated and corrective activities in order to reach an acceptable level in the educational program again. In order to provide a rich education and use all educational capacities, it is possible for students to take some of their educational credits in coordination with other campuses related to the University of Massachusetts (11).

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