



Original Article

A Comparative Study of the Undergraduate Nursing Curriculum in Iran and at the University of Washington, USA

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Abstract

Background: The education and training of the next generation of nurses necessitate that undergraduate nursing programs keep pace with the ever-increasing global changes and emerging knowledge. Comparing educational systems, it is possible to enhance the academic credibility of educational programs, expand the horizons of nursing, and improve the quality of nursing care. Therefore, this study aimed to conduct a comparative analysis of the undergraduate nursing education programs in Iran and at the University of Washington, USA.

Methods: This descriptive comparative study was conducted in four stages (description, interpretation, juxtaposition, and comparison) using the Brady model in 2022-2023. The necessary information for the undergraduate nursing program in Iran and Washington was obtained from the Ministry of Health, Treatment, and Medical Education website and the University of Washington website, respectively.

Results: There were differences between the universities of Iran and Washington in terms of the elements of the undergraduate nursing curriculum, including philosophy, mission, vision, objectives, roles of graduates, conditions and methods of student admission, course characteristics and structure, educational program implementation strategies, and program evaluation methods. The most significant differences were in the duration of the program and the number and titles of the courses.

Conclusion: Given the crucial role of nurses in providing health and medical services, it is recommended that revisions be made to the philosophy, mission, objectives, admission methods, and course units of this program. Additionally, clear guidelines regarding the evaluation of the program and student assessments should be provided to strengthen the strengths and address the weaknesses of the undergraduate nursing curriculum, thereby improving the quality of education for students in this field and, consequently, the quality of nursing care.

Keywords: Comparative study, Curriculum, Undergraduate nursing program in Iran, Undergraduate nursing program in Washington

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Introduction

Universities, as the most important educational institutions, are responsible for training the specialists needed by the country, creating and producing new knowledge, and advancing the frontiers of science and knowledge. Every educational institution must educate and develop the students who enter it. In the university education system, education implies creating appropriate and increasing changes in the product of this system, that is, graduates (1). The prerequisite for sustainable and comprehensive

development of the higher education system is balanced and proportional growth in both quantitative and qualitative dimensions. Attention to quantitative growth and neglect of qualitative growth will have adverse consequences, such as academic decline, scientific dependency, lack of creativity and entrepreneurship, brain drain, and weak scientific production for this system (2). Among them, nursing education, as part of the higher education system, has special importance and a particular position due to its close connection with public health (3).



Examining the status and position of nurses in the service delivery system worldwide indicates that they must have appropriate scientific and practical capabilities with up-to-date knowledge to provide educational, health, treatment, preventive, supportive, and rehabilitative services because the quality of health and medical care largely depends on how they provide services. In addition, identifying existing issues in nursing education and taking action to address and correct them will improve the achievement of educational goals and the training of skilled individuals and enhance the quality of healthcare services at the national level (4).

In recent decades, although nursing education has made considerable progress worldwide, challenges in the competence of graduates, the quality of education, and the core nursing curriculum have been observed as well (5). To improve nursing education, quantitative and traditional methods and curricula are no longer sufficient, and the nursing curriculum must be continuously reviewed (6,7). Various studies in the nursing education system have emphasized the need for continuous changes, the need for analysis, and continuous updating of services to identify problems and challenges to optimize the quality of education and prepare a comprehensive and coordinated program with the health needs of the community (8,9). Changes in the content and curriculum planning should be based on the expansion and improvement of content-based, inquiry-driven education using new educational technologies (10). The dynamism of healthcare has created challenges for nursing educators who must think about developing nursing education programs to prepare nurses for new roles and responsibilities in line with the changes in healthcare systems. Additionally, external factors, such as the globalization of education and competition among universities, can be important and necessitate changes in nursing education programs for nursing educators (11). Extensive evidence has mentioned the growing phenomena of globalization and intercultural nursing as challenges in nursing service delivery (12). Examining strengths and weaknesses, identifying opportunities and threats, and striving to improve the desired situation and achieve a superior position are among the most important tasks of organizations, including universities (13). Therefore, educational institutions must regularly review and revise their curricula and appropriately respond to external changes to provide effective curricula. To this end, most countries have utilized comparative education research (3). Today, comparative studies (the most dynamic modern educational methods) are among the best research methods used for educational affairs and planning to examine the differences and similarities of educational systems to discover strengths and weaknesses (3,14,15), which can thus identify the reasons for the success and failure of these systems and use their experiences to advance and develop them (16).

George Bereday, a Polish researcher and professor at Columbia University (1964), presented a model for the

comparative analysis of educational systems. According to Bereday's model, researchers who wish to conduct studies with a comparative approach to educational systems must familiarize themselves with the cultures of the countries being compared and avoid cultural biases (17). Bereday's goal in creating the comparative view of educational systems was to develop a theory for comparing entire higher education systems (18). Some studies indicate that nursing education systems also use the comparative method (10,13,19).

Conducting comparative research and comparing different educational systems lead to the identification of similarities and differences, strengths and weaknesses of educational systems and, consequently, the enhancement of the content and quality of educational programs. In addition, by utilizing the experiences of international universities in various educational fields while considering the cultural, political, economic, and social context of Iran, it is possible to take steps toward addressing existing difficulties, empowering and improving curricula, and significantly assisting the developers of nursing education programs in Iran. This will enable them to develop or modify educational programs and select more appropriate objectives, content, teaching methods, and evaluation techniques with a broader perspective (20). Therefore, the present study aims to compare the structure of the undergraduate nursing curriculum at the University of Washington, USA, with the current educational program in Iran. The reason for choosing the University of Washington for comparison was that it is one of the top research universities, ranked ninth among the top 100 universities in the USA, and is one of the oldest public universities in the country. According to U.S. News and World Report, the School of Nursing at this university is also ranked first among public schools with doctoral nursing programs, as well as master's and Bachelor of Science in Nursing (BSN) programs. This comparison will help identify the status and shortcomings of the curriculum in Iran, providing a basis for reviewing the current curriculum and incorporating appropriate elements into it.

Methods

This study is applied research of a descriptive-comparative type based on Bereday's model, aimed at performing a descriptive-comparative analysis of the undergraduate nursing education program at the University of Washington, USA, and Iran in 2022-2023. Bereday (1964) referred to a four-stage method for the field of comparative education, which was also implemented in this study; "description" is the first stage of comparative studies. In this stage, systematic data collection was conducted using primary, secondary, and auxiliary sources. Researchers searched for sets of educational information about each country. Information related to the University of Washington, USA, was obtained through the university's electronic website, and information on the undergraduate

nursing program was obtained from valid and available documents. The undergraduate nursing education program in Iran, approved by the Supreme Council for Medical Sciences Planning (2014), was obtained from the Ministry of Health, Treatment, and Medical Education website. Additionally, for both countries, a comprehensive search was performed on PubMed, Scopus, ScienceDirect, Google Scholar, Magiran, and SID databases using several keywords, such as nursing education, undergraduate nursing, the undergraduate nursing curriculum in Washington and Iran, comparative studies, and Bereday's method (2000–2022). Relevant and eligible articles were reviewed. The second stage is "Interpretation", which follows the "Description" stage. In this stage, the researcher placed all the data collected in the first stage within larger social contexts, as there are close interrelationships between education and society. The third stage is "juxtaposition". The comparative study essentially begins with the third stage. Its goal is to generalize and summarize aspects that are comparable across regions or countries. In this stage, the data were examined considering themes and then summarized with a hypothesis, and a summary of the comparative analysis was presented accordingly. To discuss the comparison

of the studied phenomena, they had to be placed side by side. Finally, the fourth stage is "Comparison". The aspects juxtaposed in the previous stage were analyzed and compared in this stage (18,21).

Results

After conducting a study on factors influencing educational systems, including history, geographical location, political system, culture and language, and economy in both Iran and the USA, the researcher examined the educational history, structure of education, educational goals, educational levels, grading system, examinations, extracurricular activities, higher education, and academic degrees in both countries. Ultimately, the necessary information regarding the elements of the undergraduate nursing curriculum was obtained by comparing the School of Nursing at the University of Washington and universities in Iran. The related data included philosophy, mission, vision, goals, roles of graduates, admission conditions and procedures, course characteristics and structure, educational program implementation strategies, program evaluation methods, and academic progress (Tables 1 and 2).

The start time of nursing education in both universities

Table 1. History and Evolution, Course Title, Admission Requirements, Licensure, and Roles of Graduates of the Undergraduate Nursing Programs in Iran and at the University of Washington, USA

	Washington	Iran
History of the field and recent advances	Nursing education at the University of Washington began approximately 100 years ago. The president of the University of Washington introduced the first course in 1918, which included a summer class on public health nursing. Four years later, Elizabeth Sterling led the establishment of the nursing department in the Seattle area and was among the first to play a role in accrediting and forming the National Organization for Public Health Nurses. In 1923, the department began offering a bachelor's degree in nursing. Within less than ten years, the entire School of Nursing aimed to offer a master's degree (22).	Scientific nursing in Iran began in 1915 with the establishment of the first nursing school in the city of Urmia by religious missionaries. In 1916, another school in Tabriz started training nurses through a three-year program, admitting candidates with a third-grade secondary education certificate. In 1965, the first four-year nursing education program was initiated with the establishment of the Firoozgar Higher Institute of Nursing. In 1975, admission to the bachelor's degree in nursing was centralized under the Ministry of Science and Higher Education. In 1982, a two-year associate degree program was approved based on the country's conditions, and admission to the bachelor's level and the current system of undergraduate nursing education was established in 1987 (23).
Name of the field and relevant degree	BSN	Undergraduate nursing
Duration of the program	Two years (8 semesters, with each season considered a semester) (22).	Four years (8 semesters) (23).
Similar fields	ABSN (22)	None
Admission requirements	To calculate the GPA, BSN applicants must have an average GPA of 3 or higher. If they do not meet this requirement, they must complete prerequisite courses. The BSN prerequisite courses include English, mathematics, chemistry, nutrition, anatomy and physiology, and microbiology. Applicants must also attend informational sessions and complete the necessary documentation (22).	Entrance exam
Licensure	To obtain an RN license, graduates must pass the NCLEX exam (22).	No NCLEX exam
Expected competencies, roles, and professional responsibilities	BSN graduates are prepared as clinical experts. The undergraduate nursing program enhances critical thinking, healthcare, and competency in promoting individual and community health. Clinical experiences occur in a wide range of hospitals and public health service environments, expanding roles, decision-making power, health assessment, and knowledge enhancement. Indirectly, the program's goals refer to management, researcher, coordinator, educator, planner, and caregiver roles (22).	Nursing is an independent field and a branch of medical sciences. Graduates, as members of the health team, provide health, educational, research, consultative, preventive, managerial, supportive, therapeutic, and rehabilitative services in various related fields. The continuous undergraduate nursing program is the first academic level in nursing, and its curriculum is prepared and developed based on scientific standards and Islamic values (23).

Note. ABSN: Accelerated Bachelor of Science in Nursing; BSN: Bachelor of Science in Nursing; GPA: Grade point average; RN: Registered nurse license; NCLEX: The National Council Licensure Examination.

Table 2. Philosophy, Mission, and Vision of the Undergraduate Nursing Program in Iran and the University of Washington, USA

	Washington	Iran
Philosophy	<p>The University of Washington School of Nursing believes that the goal of the undergraduate nursing program is to prepare nurses who practice based on theory and research. The philosophy of this program is rooted in superior values, community diversity, social justice, integrity, and creativity.</p> <p>The diversity of roles requires awareness in various fields of knowledge, humanities, arts, and discipline-specific content and processes. Emphasis on interdisciplinary knowledge engages students in a wide range of ideas and sciences. The nursing profession requires knowledge derived from research, social justice, advocacy, and lifelong learning.</p> <p>Faculty members believe that the teaching style should align with an understanding of how learners learn. The undergraduate curriculum emphasizes critical thinking, analysis, communication, and cultural diversity. The undergraduate program empowers individuals to take on leadership positions and practice evidence-based care. Nurses collaborate with other organizations to enhance the quality of community health. The curriculum aims to provide graduates with the competence to collaborate with individuals, families, and communities (22).</p>	<p>The undergraduate nursing program should focus on moral excellence, the promotion of Islamic culture, spiritual growth, and the balanced and comprehensive advancement of society toward true perfection.</p> <p>It should facilitate the spiritual growth of students.</p> <p>It should preserve the right to life, health, and decision-making for humans as God's vicegerent and the noblest of creatures.</p> <p>Health is a dynamic state influenced by various factors and the interaction of internal and external factors, changing along a continuum from maximum to minimum.</p> <p>It should improve individual health based on up-to-date knowledge and real biological, psychological, social, and spiritual conditions.</p> <p>The completion of human virtues, such as the power of reason and thought, occurs through continuous learning.</p> <p>Health care and nursing of clients are meaningful within the context of coordinated teamwork. Humans are a unique set of various dimensions that interact to form their existence. The entirety of society is also the result of interactions and relationships among individuals, each with specific rights and responsibilities.</p> <p>A systemic view of humans necessitates that their existence be examined and cared for in the context of biological, social, cultural, and spiritual influences.</p> <p>The variable factors in living conditions and environments create changing health needs and diversity in nursing care.</p> <p>Education and learning are mutual processes that, through the interaction and coordination of the teacher and learner, move toward learning goals.</p> <p>Nursing education includes acquiring cognitive, emotional, and psychomotor skills, which are achieved through the teaching of various sciences and the role modeling of the instructor.</p> <p>Nursing education should facilitate the comprehensive growth of students and foster their commitment to lifelong learning and professional excellence.</p> <p>Nursing education is designed to enhance the ability to use critical thinking in problem-solving and decision-making.</p> <p>It is recommended that modern teaching methods that aid in improving learning and are designed based on the needs, abilities, and previous experiences of learners be used in the undergraduate nursing program (23).</p>
Mission	<p>The curriculum should aim to advance the science and practice of nursing through generating knowledge and preparing future leaders to address local, national, and global needs (22).</p>	<p>The mission of the undergraduate nursing program is to train graduates who, relying on up-to-date knowledge, skills, efficiency, faith, commitment, compassion, and professional ethics, and establishing effective professional communication, provide the necessary nursing care services to all members of society from prevention to rehabilitation using standard methods and tools.</p> <p>This program trains nurses who are committed to self-directed learning and regularly update their knowledge and skills in all dimensions during their service period (23).</p>
Vision	<p>The curriculum should encourage the students to be leaders in advancing health and healthcare through new nursing knowledge, education, and practice (22).</p>	<p>In the next ten years, the undergraduate nursing program, in line with the changing needs of societies, will dynamically achieve regional and global standards of nursing education. The graduates of this program will attain a defined and effective position in providing care at all levels of health, from prevention to rehabilitation, within the country's health system. Moreover, the graduates of this field will provide effective and cost-efficient services in advancing the health level of all members of society and improving the quality of life of clients. The services of graduates of the undergraduate nursing program will be of the highest quality in the region and will be internationally competitive (23).</p>

was almost the same, with the difference that the University of Washington offered a bachelor's degree 50 years earlier than Iran. The duration of the bachelor's program at the University of Washington was shorter due to the absence of summer vacations for students and the offering of one academic term per season. In addition, students who had previously obtained a bachelor's degree could complete this program in one and a half years (Accelerated Bachelor of Science in Nursing, ABSN), whereas this opportunity did not exist in Iranian universities. The admission conditions also differed between the two universities (Table 1).

The philosophy of the undergraduate nursing program was fully articulated in Iran and at the University of Washington. At the University of Washington, the emphasis was on interdisciplinary knowledge, research-based knowledge, social justice, support and lifelong learning, critical thinking, analysis, communication, and cultural diversity. In Iran, the philosophical statement was written in 18 broad points, but the specific belief or emphasized value was unclear. In

terms of being comprehensible and based on a specific theory, the philosophy of the University of Washington was understandable and rooted in superior values, societal diversity, social justice, integrity, and creativity (Table 2). It refers to awareness in various fields of knowledge. Pluralism is somewhat tangible in it. It also refers to action based on theory and research, indicating a belief in the philosophy of scientific realism. In Iran, the philosophy of the undergraduate nursing program is also understandable and based on systemic, interactive, and holistic theories. For example, it states that we should have a systemic and holistic view of patient care, address the biological, spiritual, social, and cultural needs of patients, and use an interactive and feedback approach in education.

Based on the findings (Table 2), the mission of the University of Washington was to meet local, national, and global needs through producing knowledge and preparing future leaders, while that of Iranian universities was to meet the need for care from prevention to rehabilitation, relying on up-to-date knowledge, skill, and efficiency, faith

and commitment, compassion and kindness, professional ethics, and effective professional communication. The mission of the University of Washington was to address local, national, and global needs. In Iran, the goal of the field was to provide nursing care services to all people, from prevention to rehabilitation. The mission of the University of Washington took into account the work of the field to be the advancement of nursing science and practice, and its services in the present and future included producing knowledge and preparing future leaders. The mission of Iranian universities considered the work of the field to be the training of graduates based on up-to-date knowledge, skill and efficiency, faith and commitment, compassion and kindness, professional ethics, and effective professional communication, and its services in the present and future encompassed the self-directed nature of the curriculum and the acquisition of up-to-date knowledge by graduates. The data (Table 2) revealed that both visions are concise, understandable, and clear. Furthermore, they are inspiring and challenging, idealistic, and encouraging for clients. Moreover, they align with the mission and define an ideal state. Additionally, they are realistic, achievable, flexible, and accompanied by creativity in practice. Regarding the point of agreement among the clients, the vision of the University of Washington refers to the promotion of health and healthcare, while in Iran, it refers to the advancement of the health level of the entire society and the improvement of the quality of life of clients. Regarding the description of the level of services in the future, the vision of the University of Washington only refers to the promotion of health and healthcare, but in Iran, it is clearly stated that within the next ten years, the undergraduate nursing program will be aligned with the changing needs of societies.

The findings further demonstrated that the goals of the undergraduate nursing program in both universities are clearly and understandably stated, general, based on mission, vision, and philosophy, and are measurable and relatively achievable (Table 3). They are also related to the critical factors of the organization. For example, the goals of the undergraduate nursing program at the University of Washington emphasize the value foundations of professional behaviors, ensuring patient safety, and improving the quality of care through high-quality services. In Iran, providing care and meeting the health needs of the clients are related to the critical factors of the organization. In Washington, the goals are simple and understandable and comprehensively encompass the organization's performance, but in Iran, they are simple and understandable but do not encompass all organizational performance. For example, there is no goal written about peer education or activities in the faculty or no mention of ethical and professional issues, critical thinking, clinical decision-making, and equitable health measures.

According to the obtained information, most of the

implementation strategies in both universities are similar, with only a few differences. One difference is the allocation of nursing grants to healthcare professionals, which is not mentioned in Iran, and the other is collaboration with other organizations to improve the quality of community health. Regarding teaching methods, it can be mentioned that at the University of Washington, more attention is paid to critical thinking and teaching styles based on awareness of learners' learning methods compared to Iran; however, they are almost similar in other aspects.

According to Table 4, there are significant differences between the course units of the two universities in terms of both the number of units and their types. Students at the University of Washington needed to complete 50 more units than Iranian students to obtain a bachelor's degree, despite their program being two years long and graduating two years earlier than Iranian students. The differences in units will be further explained in the Discussion section.

Based on the data in Table 5, the School of Nursing at the University of Washington has a special committee and a clear and transparent program for both program evaluation and student evaluation, which can greatly contribute to the empowerment of graduates in this field. Unfortunately, these aspects are not found in the undergraduate nursing program in Iran.

Discussion

The present study compared the undergraduate nursing curriculum at the University of Washington, USA, with the common educational program in Iran. Based on the comparison, in the undergraduate nursing curriculum at the University of Washington, the philosophy has been clearly stated, and the field, history, student admission process, and goals have also been clearly defined. However, the vision, mission, and roles of graduates have not been clearly mentioned and are either very general or can be inferred from other parts of the program. The content of the program aligns with the philosophy and goals. The evaluation methods have been clearly stated. In addition, the presence of precise program evaluations, theoretical units, and detailed clinical evaluations, as well as a coordination committee to monitor students' progress in acquiring skills and maintaining patient safety, is highly important. Interestingly, there is also the possibility of counseling and private tutoring for weak students (22).

The philosophy, vision, and mission have been clearly mentioned in the undergraduate nursing curriculum in Iran. However, the philosophy pays less attention to aspects such as cultural diversity, social justice, nursing actions derived from research and theory, evidence-based practice, and collaboration with other organizations and units. Regarding the mission, while attention is given to the mentioned aspects, more focus should be placed on knowledge production to advance nursing science and practice, and international needs should be considered in addition to local and national needs. The vision of

Table 3. Goals, Educational Implementation Strategies, and Teaching Methods of the Undergraduate Nursing Program in Iran and the University of Washington, USA

	Washington	Iran
Goals	<ul style="list-style-type: none"> Integrating concepts from arts and various sciences to enhance health levels and manage complex nursing care situations Applying leadership concepts, skills, and decision-making in providing care and supervising nursing actions in various settings Ensuring patient safety and improving care quality through high-quality services Evaluating, critically summarizing, and interpreting existing evidence within the framework of nursing practice Integrating and coordinating nursing knowledge, processes, and skills, patient care information and technologies, and communication tools to facilitate clinical decision-making and provide safe and effective care for the elderly Describing the effects of equitable and biased health measures, economic, legal, political, social, and cultural factors in care delivery Demonstrating effective and professional communication and collaboration to optimize health outcomes Supporting disease prevention strategies at individual, family, community, and population levels to promote health Emphasizing the foundational values of professional behavior, including altruism, autonomy, integrity, social justice, and respect for diverse cultures and human dignity Focusing on critical thinking, clinical decision-making, and the necessary skills for providing compassionate, comprehensive, competent, and evidence-based care to patients across the lifespan (22) 	<ul style="list-style-type: none"> Establishing appropriate and effective professional communication with patients, companions, families, attending physicians, and other health team members Identifying the health needs of clients through nursing diagnoses with a research-oriented approach Developing, implementing, and evaluating care plans to address problems and improve the health of clients Providing care for patients of all age groups in various settings. Educating clients, their companions, and families Coordinating the health team to address the nursing problems of clients Training students to be lifelong learners (23)
Educational implementation strategies	<ul style="list-style-type: none"> Employing creative thinking, critical thinking, and research methods in nursing education Developing and delivering educational programs aligned with national, local, and international needs Designing and delivering educational programs that are culturally relevant Emphasizing evidence-based practice in educational programs Collaborating with individuals, families, and communities to prevent and promote health in educational goal setting Providing educational programs that combine teacher-centered and student-centered approaches Utilizing new educational methods and techniques with an emphasis on creative thinking and problem-solving Offering continuous education, annual updates, self-learning classes, and online education Allocating nursing grants to healthcare professionals Collaborating with other organizations to enhance community health quality (22) 	<ul style="list-style-type: none"> Employing creative thinking, critical thinking, and research methods in nursing education Setting goals based on community-oriented nursing education objectives Developing and delivering educational programs aligned with national and local needs and available resources Designing and delivering programs with an emphasis on evidence-based practice Emphasizing prevention and health promotion for individuals, families, and communities in educational goal setting Providing educational programs that combine teacher-centered and student-centered approaches Utilizing new educational methods and techniques with an emphasis on creative thinking and problem-solving Training and strengthening students' clinical skills through practical care models, fostering self-learning and continuous learning (23)
Teaching methods	<p>Educational programs are delivered using a combination of teacher-centered and student-centered approaches. Faculty members believe that teaching styles should align with an understanding of how learners learn. The undergraduate curriculum emphasizes critical thinking, analysis, communication, and cultural diversity.</p> <ul style="list-style-type: none"> Using audiovisual aids in the form of educational films and multimedia CDs and performing certain techniques on mannequins during internships and clinical training under the direct supervision of an instructor Utilizing educational aids (including overhead projectors, projectors, mannequins, and films) as appropriate for the type of lesson <p>After practical lessons, learners have the necessary opportunities to practice and repeat methods (22).</p>	<p>Teaching methods vary by course type and include lectures, question and answer sessions, role-playing to demonstrate procedures, providing opportunities for repetition and practice, conferences, group discussions, and problem-based learning.</p> <ul style="list-style-type: none"> Using audiovisual aids in the form of educational films and multimedia CDs and performing certain techniques on mannequins during internships and clinical training under the direct supervision of an instructor Employing educational aids (including overhead projectors, projectors, mannequins, and films) as appropriate for the type of lesson <p>After practical lessons, learners have the necessary opportunities to practice and repeat methods (23).</p>

the program is well articulated, considering the available resources. Moreover, the field, history, program goals, and roles of graduates and professional roles have been clearly defined. However, the goals pay less attention to aspects such as value foundations and professional behaviors (i.e., altruism, autonomy, social justice, cultural diversity, critical thinking, and clinical decision-making). The professional roles also pay less attention to the research role. Regarding evaluation, sufficient information is not

provided and needs improvement (23).

Regarding the course units at Washington, it has been observed that special attention is given to the health assessment course, with ten units dedicated to this subject, indicating the importance of assessment in identifying patient problems. When an individual has the skill of examination and assessment, they will undoubtedly provide more comprehensive and accurate care to their patients. However, this subject is highly underemphasized

Table 4. Course Units of the Undergraduate Nursing Program in Iran and the University of Washington, USA

Washington	Iran
<p>Undergraduate students must complete 180 units, including 89 general education units and 91 specialized units. Students may choose to take more than 180 units, including undergraduate research, which involves independent study on a specific nursing problem.</p> <p>Semester 1:</p> <ul style="list-style-type: none"> • Health Assessment: 5 units • Geriatric Nursing: 2 units <p>Semester 2:</p> <ul style="list-style-type: none"> • Health Assessment: 5 units • Basic Nursing Care Skills: 4 units • Human Responses and Reactions: 3 units • Clinical Applications of Anatomy and Physiology: 3 units • Pharmacology in Nursing 1: 2 units <p>Semester 3:</p> <ul style="list-style-type: none"> • Care in Illness 1: 5 units • Care in Illness 1 (Practical): 5 units • Human Responses 2: 3 units • Pharmacology in Nursing 2: 3 units <p>Semester 4:</p> <ul style="list-style-type: none"> • Care in Illness 2: 5 units • Care in Illness 2 (Practical): 5 units • Foundations of Professional Nursing: 3 units • Cultural Diversity and Nursing (Practical): 3 units • Geriatric Nursing: 2 units • Advanced Seminars and Research Project (for outstanding students): 1-3 units <p>Semester 5:</p> <ul style="list-style-type: none"> • Cultural Diversity and Nursing Practice (Elective): 3 units • Introduction to Nursing Research (Elective): 3 units <p>Semester 6:</p> <ul style="list-style-type: none"> • Family Nursing: Reproductive and Child Health: 5 units • Introduction to Nursing Research: 3 units • Legal and Ethical Issues in Clinical Practice: 3 units • Advanced Seminars and Research Project (for outstanding students): 1-3 units <p>Semester 7:</p> <ul style="list-style-type: none"> • Psychiatric Nursing in Health and Illness: 3 units • Psychiatric Nursing (Practical): 4 units • Community Health Participation: 4 units • Community Health: 3 units • Advanced Seminars and Research Project (for outstanding students): 1-3 units <p>Semester 8:</p> <ul style="list-style-type: none"> • Transition to Professional Practice: 9 units • Healthcare Systems: 3 units • Transition to Profession (Practical): 3 units • Advanced Seminars and Research Project (for outstanding students): 1-3 units (22). 	<p>Total course units required for the undergraduate nursing program: 130 units</p> <p>General education courses: 22 units</p> <ul style="list-style-type: none"> • Two courses in Islamic Theoretical Foundations (4 units), one course in Islamic Ethics (2 units), one course in Islamic Revolution (2 units), one course in Islamic History and Civilization (2 units), one course in Introduction to Islamic Resources (2 units), Persian Literature (3 units), General English (3 units), Physical Education (1) and (2) (1 unit each), Family and Population Studies (2 units), and History of Islamic and Iranian Culture and Civilization (2 units). <p>Basic courses: 15 units</p> <ul style="list-style-type: none"> • Anatomy (2 units), Physiology (3 units), Genetics and Immunology (2 units), Biochemistry (1.5 units), Microbiology (1.5 units), Parasitology (1.5 units), Introductory Biostatistics (1 unit), Nursing Research (1.5 units), and Information Technology in Nursing (1 unit). <p>Specialized courses: 54 units</p> <ul style="list-style-type: none"> • Nutrition and Diet Therapy (1.5 units), Principles of Epidemiology and Control of Common Diseases (1 unit), Individual and Social Psychology (2 units), Pharmacology (2 units), Specialized Language (2 units), Patient Education Process (1 unit), Principles and Skills of Nursing (4 units), Nursing Ethics and Professional Communication (1.5 units), Individual and Family Health Nursing (1.5 units), Community Health Nursing (1.5 units), Environmental Health Nursing (1 unit), Health Assessment (1 unit), Maternal and Neonatal Health Nursing (2.5 units), Nursing in Maternal and Neonatal Health Disorders (2 units), Basic Nursing Concepts (2 units), Adult/Geriatric Nursing 1 (3 units), Adult/Geriatric Nursing 2 (3 units), Adult/Geriatric Nursing 3 (4 units), Home Nursing Care (2 units), Comprehensive Nursing Care in Special Units (3 units), Emergency Nursing in Crises and Disasters (1.5 units), Healthy Child Nursing (2 units), Pediatric Nursing (3 units), Mental Health Nursing (2 units), Psychiatric Nursing 2 (3 units), and Principles of Nursing Service Management (2 units). <p>Internships: 18 units</p> <ul style="list-style-type: none"> • Principles and Skills of Nursing (1 unit), Maternal and Neonatal Health Nursing (2 units), Community/Individual and Family/Environmental Health Nursing (2 units), Adult/Geriatric Nursing 1 (2 units), Adult/Geriatric Nursing 2 (2 units), Adult/Geriatric Nursing 3 (2 units), Nursing in Common Problems in Iran (1 unit), Healthy Child and Pediatric Nursing (2 units), Mental Health and Psychiatric Nursing (2 units), Special Care Nursing (1 unit), and Clinical Pharmacology (1 unit). <p>Field internships: 21 units</p> <ul style="list-style-type: none"> • Maternal and Neonatal Health Nursing (2 units), Community/Individual and Family/Environmental Health Nursing (2 units), Adult/Geriatric Nursing 1-3 and Home Care Nursing (8 units), Pediatric Nursing (2 units), Special Care Nursing (3 units), Principles of Nursing Service Management (2 units), and Emergency Nursing in Crises and Disasters (2 units) (23).

in the Iranian nursing curriculum, with only one unit dedicated to it. Perhaps one of the reasons for the lack of nursing care based on the nursing process in Iran is this issue, as the first step in the nursing process is patient assessment. The underemphasis on assessment in the nursing curriculum of Iran may be due to the overlap of their roles with physicians, which seems illogical. Another notable aspect of the undergraduate nursing curriculum at Washington is the special attention to cultural diversity, with two units allocated to this subject. In the context of Iranian society, cultural diversity is also extremely high and evident, but this aspect is not included in the curriculum of the universities of Iran. Nurses familiar with different cultures will provide more effective care to their patients, which is particularly essential given the current discussions on the globalization of nursing. In Washington, 15 units have also been offered to individuals and communities, suitable for providing

care services to people from different communities and aligned with the cultural diversity unit. Another notable unit is nursing research, with six units dedicated to this subject in the Washington curriculum, which can significantly impact evidence-based practice, whereas, in the curriculum of Iran, only 1.5 units are allocated to this subject. Both universities have paid attention to nursing ethics, but the University of Washington has also addressed legal issues alongside ethics. Despite the increase in complaints and legal problems for nurses in Iran, legal and regulatory issues for clinical work have not been addressed. Considering the aging population, both universities have paid attention to geriatric nursing. A highly notable subject in the Washington curriculum is a course entitled “Transition to Professional Practice”, with nine theoretical and three practical units dedicated to it, but it has not been addressed in Iran. Nurses need preparation to enter the clinical field and may experience

Table 5. Program Evaluation and Academic Progress Assessment in the Undergraduate Nursing Program in Iran and at the University of Washington, USA

	Washington	Iran
Program evaluation and assessment	<p>The BSN Coordination Committee (BSNCC) is responsible for evaluating the BSN program. This committee assesses student competencies upon entry into the program, at the end of the first year, at the end of the final year, and one year after graduation. Multiple sources used for evaluation data include students, faculty, graduates, and supervisors of graduates. The BSNCC reviews data from the annual program evaluation, student outcomes based on specific criteria (student progress, course grades, weekly faculty meetings during teaching, and clinical evaluations every three months: mid-term and final, student issues discussed quarterly by the BSNCC).</p> <p>Formative evaluation:</p> <ul style="list-style-type: none"> • Weekly faculty meetings • Monthly BSNCC meetings • BSNCC reports from meetings and student representatives • Annual review and examination of program gaps, overlaps, and other issues by the BSNCC • Course evaluations by students and faculty colleagues <p>Summative evaluation:</p> <ul style="list-style-type: none"> • Curriculum changes made as necessary based on BSNCC and faculty meetings • Final clinical evaluation for completing practical courses • First-time NCLEX pass rates • Program evaluation tools designed to measure specific relevant outcomes (22) 	<p>The internal and external evaluation team of the Evaluation and Planning Office of the University's Educational Deputy evaluates the undergraduate programs in midwifery and nursing, the residency program in physical medicine and rehabilitation, and the Doctor of Pharmacy program with the active participation of faculty members from the relevant departments. It is worth mentioning that the Secretariat of the Specialized Council of the Ministry has stipulated that the expansion of new courses and disciplines in medical universities across the country is contingent upon the completion and final report of the internal evaluation of educational programs leading to a degree in the educational departments (23).</p>
Academic progress evaluation by the BSNCC Coordination Committee	<p>To achieve satisfactory academic progress and graduate, BSN students at the university and college must earn a grade of 2 in all units. Within two semesters after initial enrollment in the BSN program, students must satisfactorily complete 45 units. The BSNCC monitors the satisfactory progress of all BSN students. If the BSNCC is concerned about a student's lack of satisfactory progress based on defined criteria, the student is referred to the committee for further review.</p> <p>Further review:</p> <ul style="list-style-type: none"> • Reassessment of the student's status based on specific evidence and evaluation of the student's competence to provide patient care without compromising patient safety. • Necessary warnings to the student to address deficiencies. • Specific conditions for the student's continuation and graduation must be stated. • Provisions for enhancing satisfactory progress, including tutoring and counseling, should be provided, if necessary. • Clinical courses may be repeated or additional sessions scheduled, if necessary. • If the required conditions are not met, the student will be dismissed from the program (22). 	<p>It is not explicitly mentioned in the undergraduate nursing program in Iran.</p>
Clinical evaluation	<p>Each student is evaluated mid-term and at the end of each quarter for clinical performance by the instructor based on objectives, identifying strengths and weaknesses and providing appropriate recommendations for improvement, if necessary. Self-evaluation is also conducted by the student, and this recorded self-evaluation is submitted to the instructor. Any concerns about the student's performance and behavior are discussed during evaluation sessions. The instructor reminds the student of specific guidelines and objectives, indicating that the student is at risk of receiving a warning card (22).</p>	<p>It is not clearly stated. It appears to be more subjective, flexible, and lenient (23).</p>

Note. BSN: Bachelor of Science in Nursing.

stress in this regard, requiring specific training. Attention to this subject will help them move toward professional practice and enter the workforce more prepared. The Washington curriculum places more emphasis on English language proficiency, with ten units allocated to English writing skills and prerequisite units, despite English being their official language. In Iran, only three units have been devoted to this subject, and considering that English is essentially the scientific language and an international language, it should receive more attention. Another aspect is the greater emphasis on problem-solving, with eight units devoted to this area, which can help in patient care, nursing diagnoses, problem-solving, and the development of critical thinking. The curriculum of the universities of Iran does not pay special attention to critical thinking. Given the importance of critical thinking in nursing students, more measures need to be taken in this regard. In Washington, 15 units have also been allocated to visual, literary, and performing arts, which, considering that nursing is a blend of science and art, is suitable for enriching the spirit and providing better services. However, some subjects have also received more attention in the curriculum of the universities of

Iran, such as critical care, where students seem to gain sufficient readiness for these care areas based on the number of units they take. Our curriculum has also placed more emphasis on Islamic culture and spirituality, which is increasingly important in spiritual care today (22,23).

Comparison of the Two Universities Regarding Tuition Costs

The comparison of these two universities regarding tuition costs revealed that in Iran, free education is available, which is a significant advantage. However, at the University of Washington, students need to pay approximately \$26 000 for tuition, books, room, transportation, and personal expenses (with \$17 000 for tuition alone). The University of Washington believes that no one should be unable to realize their potential due to financial difficulties and annually awards over 100 scholarships to American students who have demonstrated financial need and submitted a Free Application for Federal Student Aid (FAFSA) application. This university does not offer scholarships to international undergraduate students. There is a \$10 000 scholarship awarded by the president to outstanding students for each academic year. Another

scholarship, named Purple and Gold, is awarded to non-American students who hold U.S. citizenship, with the amount varying based on the student's circumstances. Another scholarship, funded by private businesses and donors, amounts to \$10 000 and is awarded to students with the greatest financial need who have achieved high grades in high school (23).

Another notable aspect of the nursing curriculum at Washington is the motivation for hard work in studies through awarding points for top seminars and research projects to outstanding students, which can enhance research efforts and the academic level of the faculty. In Washington, the promotion of research is supported through financial aid for students and the availability of international and additional learning and research opportunities. In Iran, this issue has also been addressed differently, with all students able to conduct research projects under the guidance of their professors (23).

The National Council Licensure Examination (NCLEX) exam in Washington is another significant issue, and graduates must pass it to enter the practical field, providing better preparation for entering the workforce. In Iran, there is no specific exam for entering the clinical field. However, a recently introduced exam called the Professional Competency Exam has not been clearly explained but could be a good substitute. Another topic is the value of time and its maximum utilization, avoiding unnecessary holidays, offering courses during the summer term, and obtaining a bachelor's degree in two years in Washington, which allows students to graduate two years earlier compared to Iran.

Other studies have also compared the undergraduate nursing curriculum in Iran with those of other universities worldwide. For example, Baghaei and colleagues' study compared Iran, Turkey, and Jordan (24). Despite significant similarities between these countries' programs and cultures, it suggested that to improve the quality of education in Iran, attention should be paid to clinical backgrounds, conducting interviews before entering the program, offering part-time courses, and adding some specializations based on community needs. Payamani and colleagues' comparison of the undergraduate nursing curriculum in Iran with Rajiv Gandhi University in India revealed that the nursing education systems in Iran and Rajiv Gandhi University have many similarities. The only suggestion was to pay more attention to group work and self-directed learning skills in Iran and hold a professional competency exam before employment (25). Other studies in this area believe that considering the experiences of top universities worldwide can bring the undergraduate nursing curriculum in Iran closer to international standards (2,26,27). Although Salehian and colleagues' study aimed at revising the undergraduate nursing curriculum based on the concept of care in education, it emphasized that the presence of competent and caring faculty is essential for implementing the care curriculum (28). Therefore, the role of faculty cannot be overlooked.

Conclusion

Based on the results of the present study and considering the comparison made between the undergraduate nursing program in Iran and the curriculum of one of the world's leading universities, several suggestions can be made to improve the undergraduate nursing curriculum in Iran:

- In addition to the previously mentioned points regarding philosophy, mission, vision, goals, and professional roles, it is recommended that, given the lack of interest and tendency to leave the profession among many nurses in our country—often due to insufficient awareness or personality mismatch with the profession—a specific test for personality compatibility and an interview for the assessment of the individual's knowledge and interest should be conducted alongside the general entrance exam.
- Considering the increased interest in pursuing nursing studies in recent years and the fact that some graduates from other fields return to study nursing after obtaining a bachelor's degree or higher, the existence of a program like ABSN would be highly beneficial for the faster graduation of graduates from other fields.
- In terms of teaching methods, considering the educational needs of learners, flexibility in teaching methods, a greater combination of student-centered approaches, and increased use of modern methods that foster critical and creative thinking (e.g., problem-solving and group discussions instead of lectures) can be advantageous.
- Alongside the previously suggested course units, it is recommended that in courses related to religious studies (e.g., Islamic teachings), a section on spiritual values and the religious dimensions of the nursing profession be included to motivate and emphasize spiritual values among learners.
- The presence of precise program evaluations, theoretical units, and detailed clinical evaluations in acquiring student skills and maintaining patient safety is extremely important. Given the inadequacy of many graduates, evaluations, especially clinical evaluations, need to be conducted with greater rigor and strictness. The existence of a coordination committee to monitor student progress is useful.
- Considering the importance of human lives and the inadequacy of some graduates, the existence of an exam like NCLEX, which assesses both theoretical and practical skills before starting the internship period, seems necessary.

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Competing Interests

The authors declare that there is no conflict of interests in this study.

Ethical Approval

The study was conducted in accordance with the Declaration of Helsinki and approved by the Ethics Committee of Hamadan University of Medical Sciences (ethical approval code: IR.UMSHA.REC.1401.083).

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