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A Comparative Study of the Specialized Master's Degree Curriculum in Medical–Surgical Nursing in Iran and the General MSN Program in Pakistan

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ABSTRACT

Background and Aim: Nursing education is a cornerstone of health systems, directly impacting care quality and professional development. While both Iran and Pakistan offer master's level nursing education, their structural approaches differ significantly. This study aims to compare Iran's specialized Master's degree curriculum in medical–surgical nursing with Pakistan's generalist Master of Science in Nursing (MSN) program to identify strengths and provide evidence-based insights for curriculum reform.
Materials and Methods: A descriptive–comparative design was employed, utilizing Bereday's four-step model (description, interpretation, juxtaposition, and comparison). As a documentary analysis, data were retrieved from official documents issued by the Iranian Ministry of Health and Medical Education, the Pakistan Nursing and Midwifery Council, the Higher Education Commission of Pakistan, and selected university websites. The university websites were located in both Iran and Pakistan. The analysis of websites focused on a functional equivalence framework to compare specialized and generalist tracks across program objectives, structure, educational philosophy, admission criteria, teaching strategies, and evaluation methods.
Results: Both curricula share the overarching goal of preparing competent and ethically committed nurses but differ in structural orientation. The Iranian curriculum was highly specialized, emphasizing on clinical expertise in medical-surgical care, research, and endogenous cultural knowledge development. In contrast, the Pakistani MSN was a unified generalist program that prioritized competency-based education, leadership skills, interprofessional collaboration, and blended learning. Admission in Iran is centralized and examination-driven, focusing on academic merit, while Pakistan emphasizes on professional registration and clinical experience. Assessment in Iran relies heavily on written examinations and research theses, whereas Pakistan adopts more performance-oriented and applied project-based evaluations.
Conclusion: Both systems advance nursing professionalization through distinct pathways: Iran through clinical specialization and Pakistan through a leadership-oriented generalist framework. Integrating Iran's intensive clinical and ethical focus with Pakistan's flexible, competency-based, and technology-enhanced learning approach could produce a comprehensive model for curriculum reform, aligning regional programs with evolving global health standards.

Keywords: Nursing education, curriculum, medical-surgical nursing, competency-based education, comparative study.

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Introduction

Nursing education, as one of the fundamental pillars of health system, has undergone extensive transformations globally in recent decades. These changes are evident not only in clinical and caregiving domains, but also in educational structures, pedagogical philosophies, and the professional roles of nurses. Among these, graduate-level nursing education—specifically the Master of Science in Nursing (MSN)—occupies a distinctive position in enhancing scientific knowledge, developing specialized skills, and preparing professional leaders within the health system. This level of education serves as a bridge between theoretical instruction, applied research, and the assumption of key roles in education, management, and health policy-making [1].

In many countries, including Iran and Pakistan, the MSN program has been designed to address the complex needs of the health system, improve the quality of care, and develop the educational and research capacities of nurses. These programs, with their focus on theoretical education, evidence-based research, and leadership skill development, aim to train graduates capable of playing active roles in education, management, research, and health policy-making [2]. Indeed, nursing education at this level not only leads to the enhancement of professional competencies, but also paves the way for transformation in the healthcare system and the improvement of community health indicators [3].

In Iran, nursing education at the master's level is implemented under the supervision of Ministry of Health and Medical Education (MOHME) and in accordance with the regulations of the Supreme Council for Medical Sciences Planning. The program structure consists of 32 credits over 2 to 3 years, including specialized courses in nursing education, teaching methods, educational evaluation, educational management, specialized seminars, and a research thesis. Student admission is conducted through a national entrance examination administered by the Ministry of Health and a scientific interview. The program objectives include training specialized nurses in the field of education, empowering them to design and implement educational programs, and enhancing the scientific

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status of nursing within the country's higher education system [4].

In contrast, the nursing education system in Pakistan, guided by regulatory bodies such as the Higher Education Commission (HEC) and the Pakistan Nursing and Midwifery Council (PNMC), plays a significant role in directing educational reforms and improving graduate programs, which can lay the groundwork for the future development of MSN programs. This program consists of 36 credits over two years and emphasizes on competency-based education, blended learning, leadership skill development, and interprofessional education. Student admission is based on a BSN degree, clinical experience, scientific interview, and qualitative assessment. The course structure includes theoretical courses, workshops, a research project, and an educational practicum. The program objectives include training education-oriented nurses capable of designing, implementing, and evaluating educational programs, participating in health policy-making, and engaging in international nursing organizations [5-6].

In recent years, international studies have demonstrated that nurses, as the main pillars of health system, must possess up-to-date theoretical knowledge and practical skills to provide care services at all levels. Analysis of the state of nursing education in different countries indicates that identifying existing challenges within the educational system and striving to address them play an effective role in improving the quality of healthcare services and training specialized human resources [7]. In Iran, the increasing number of master's and doctoral nursing graduates, along with the growing demand for specialized services in healthcare and educational centers, has led to a change in the professional role and status of nurses. As a result, master's-prepared nurses have gained a stronger presence not only in educational activities, but also in clinical settings. This transformation has further highlighted the necessity of developing comprehensive, goal-oriented educational programs aligned with the needs of health system [8].

Curricula in higher education, as fundamental elements in fulfilling academic missions, play a decisive role in the quality of scientific and

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professional outputs. Nursing education, as part of this system, has experienced rapid and extensive growth in recent decades—growth that, alongside development opportunities, has brought challenges such as declining educational quality, deficiencies in graduates' professional competencies, and inconsistencies in course content [9-10]. On the other hand, nurses, as key members of the healthcare team, have a direct impact on the quality of care provided to patients. Therefore, improving their scientific knowledge and skills through effective educational programs is an unavoidable necessity for improving the country's health system [11-12].

At the global level, World Health Organization (WHO), in its document *Global Strategic Directions for Nursing and Midwifery 2021–2025*, emphasizes on the importance of advanced nursing education, leadership skill development, and alignment with international standards. This document calls upon countries to revise their educational programs, strengthen teaching and learning infrastructures, and enhance the professional status of nurses within the health system [11]. Furthermore, Dunlap et al. (2025), in a published article citing the American Association of Colleges of Nursing (AACN) *Essentials* document, have emphasized that MSN programs should be based on the development of professional competencies, evidence-based education, and lifelong learning [13]. In a related context, Ali et al. (2024), in a study conducted in Pakistan examining factors influencing nurses' tendency toward graduate education, demonstrated that career motivations, professional satisfaction, and the enhancement of specialized skills are among the facilitating factors in choosing MSN programs, whereas challenges such as financial constraints, workload pressure, and lack of institutional support constitute major barriers [13].

Given the structural, philosophical, and operational differences between the two countries, a comparative study of the MSN program in Iran and Pakistan appears to provide a foundation for educational reforms, improvement of curriculum quality, and alignment with global standards. This study aims to identify and compare the key elements of the master's program in nursing education in Iran and Pakistan, in order to chart pathways for improvement

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and development of nursing education in the region by drawing upon successful experiences.

The first MSN program in Iran was established in 1984 with a generalist structure offering only two tracks, including nursing education and nursing management. A major transformation occurred in the mid-2000s, and from 2008 onward when specialized tracks including medical–surgical nursing (formally established in 2012) were introduced [5, 22-23]. In Pakistan, the first MSN programs emerged in the early 2000s, with Aga Khan University pioneering graduate nursing education around 2001. Key policy developments took place in 2018 (HEC/PNC formal guidelines) and 2022 (relaxed faculty criteria and midwifery diploma equivalence), although the program remains predominantly generalist without formal specialization tracks comparable to Iran [7-8, 14].

Methods

This study employed a comparative–descriptive design with the aim of analyzing and contrasting the curriculum of specialized MSN program in medical–surgical nursing in Iran with the generalist MSN program in Pakistan. Such research designs are commonly used in higher education studies, focusing on the description of structures, objectives, content, and educational processes to enable the identification of similarities and differences between two educational systems. The methodological framework was based on Bereday's four-step model and comparison, applied sequentially throughout the research process [17]. A critical methodological rationale for this comparison lies in the structural orientation of the two programs; while Iran's MSN is organized into distinct specialized tracks, Pakistan offers a unified generalist MSN. However, as the core clinical competencies of the Pakistani MSN predominantly focus on adult health and clinical care, it maintains a functional equivalence to Iran's medical–surgical track, ensuring the validity of this comparative analysis.

In the first stage, data related to Iran's Master of Science in Nursing (MSN) program in medical–surgical nursing were collected. To establish a foundational understanding, the program's educational philosophy, mission, and vision were identified from official and academic sources,

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potentially drawing on broader national educational goals and international best practices in nursing education [1-2, 15]. Subsequently, specific data were gathered through official documents issued by the Ministry of Health and Medical Education, resolutions of the Supreme Council for Medical Sciences Planning, and the approved curriculum for 2024 [4]. These data encompassed the overall structure of the program, credit requirements, types of courses (theoretical, practical, seminar, thesis), educational objectives, student admission criteria, teaching methods, evaluation strategies, and career pathways for graduates. To supplement the data, websites of selected nursing schools—including Tehran University of Medical Sciences, Shahid Beheshti University of Medical Sciences, and Tarbiat Modares University that are located in Tehran, Iran—were reviewed. Where information was incomplete, direct communication was established with their department heads and faculty administrators to obtain the required data.

For Pakistan, information regarding the MSN program was obtained from the official 2024 document of the Higher Education Commission of Pakistan and the guidelines of the Pakistan Nursing and Midwifery Council [7]. These sources provided comprehensive details on program objectives, structure, credit requirements, admission criteria, expected graduate competencies, and instructional strategies. Supplementary data were gathered from the official websites of selected universities, including Aga Khan University**,** the University of Health Sciences in Lahore, and Liaquat University of Medical and Health Sciences.

After data collection, information from both countries was categorized and analyzed according to the study's key elements. These included program definition and philosophy, educational objectives, curriculum structure, admission requirements, expected competencies, professional roles, teaching and evaluation methods, and career pathways. The analysis was guided by national frameworks and official documents. To enhance coherence, international nursing education frameworks were also employed, including the Global Strategic Directions for Nursing and Midwifery Education 2021–2025 issued by the World Health Organization [15], and the Essentials of Nursing Education

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published by the American Association of Colleges of Nursing (AACN) [16]. These documents served as reference standards for assessing the alignment of national curricula with global benchmarks.

The analyzed information was then organized into comparative tables, enabling direct comparison of program elements between Pakistan's generalist MSN and Iran's specialized MSN in medical–surgical nursing. These tables included comparisons of objectives, course structures, admission processes, expected competencies, and teaching methods. Qualitative analyses were also conducted to examine philosophical, operational, and policy-related differences. Efforts were made to present the data within a unified framework to ensure precise and coherent comparison. As this study is based on documentary analysis, the research instrument consisted of a structured data extraction form was designed according to Bereday's model, rather than human-centered surveys.

In the final stage, similarities and differences between the two programs were synthesized. This analysis sought to identify strengths and weaknesses in each program, drawing upon successful experiences to propose recommendations for revising and improving Iran's MSN curriculum. Findings were also compared with previous comparative studies in nursing education to strengthen the validity and consistency of the analysis.

The research population consisted of official educational documents and curricular records of MSN programs in Iran and Pakistan. The research sample was drawn using purposive sampling from curricula approved by Iran's Ministry of Health and official documents from selected Pakistani universities and regulatory bodies. No human data or surveys involving students or faculty were conducted as the focus was exclusively on document analysis.

Throughout the analysis, ethical principles of research were observed, including integrity in the use of sources, honesty in reporting findings, and respect for intellectual property related to educational documents in both countries. The credibility of sources was evaluated using both external and internal criticism. External criticism assessed the

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authenticity of documents, the authority of issuing institutions, and the official status of databases, while internal criticism examined the relevance of content to the study's objectives and research questions. To enhance scientific validity, official documents from Iran's Ministry of Health and Medical Education, the Pakistan Nursing and Midwifery Council, and the Higher Education Commission of Pakistan were utilized. Additionally, scholarly articles published in nursing education journals in both countries were employed as complementary sources for analyzing program structures, objectives, and key curricular elements.

Results

A comparative analysis was conducted on the key elements of specialized MSN curriculum in Iran and the generalist MSN program in Pakistan. The examined elements encompassed historical development, educational philosophy (values and core beliefs), vision, mission, specialized tracks, student admission procedures, tuition structures, graduate expectations, anticipated core and clinical competencies, instructional and evaluation strategies, overall program structure, and credit requirements. Data for each component were systematically collected and organized into comparative tables. Following the descriptive phase, the functional equivalence between Iran's medical–surgical track and Pakistan's generalist framework was scrutinized to identify similarities and differences, thereby providing a robust foundation for curriculum reform recommendations. The synthesized findings of the study are presented in Tables 1 through 7, facilitating a direct comparison between the specialization-based model of Iran and the competency-based generalist model of Pakistan.

1. Educational Philosophy, Values, and Strategic Directions

The foundational framework of any curriculum is defined by its educational philosophy and core values, which steer the mission and vision toward specific professional outcomes. A comparative analysis of these elements in Iran and Pakistan reveals distinct ideological underpinnings. Iran's curriculum exhibits a culturally endogenous approach, deeply integrated with Islamic values and

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family-centered care, emphasizing the spiritual and social dimensions of nursing within a national context. In contrast, Pakistan's MSN program adopts a more globalized, competency-based philosophy, focusing on preparing nurses for advanced independent roles and leadership in multicultural environments. While both nations aim to elevate the professional status of nursing, Iran focuses on clinical specialization and academic excellence in the region, whereas Pakistan prioritizes international standards and technological integration. These philosophical foundations are detailed in Table 1.

Table 1. Comparative Analysis of Educational Philosophy, Core Values, Mission, and Vision between Iran's Specialized Medical–Surgical Nursing Curriculum and Pakistan's Generalist MSN Program

Characteristic Examined	Iran	Pakistan
Educational Philosophy	The philosophy of Iran's medical–surgical MSN program is grounded in Islamic values, professional ethics, and family-centered care. It emphasizes human dignity, social justice, accountability, and the integration of theoretical knowledge with clinical practice. Particular attention is given to the spiritual, cultural, and social dimensions of adult patient care within the Iranian context [4,18-19].	The philosophy of Pakistan's MSN program is designed according to global principles of care, professional competence, and international ethics. It emphasizes critical thinking, clinical decision-making, evidence-based practice, and readiness to provide services in multicultural and complex environments. The program seeks to prepare nurses for independent and advanced roles in the health system [7].
Values and Beliefs	Core values include academic integrity, professional commitment, respect for patient rights, teamwork, and social responsibility. Beliefs highlight the integration of science and ethics, attention to Islamic culture, and the promotion of community health through humane and ethical care [4,18-19].	Values emphasize adherence to international ethical principles, respect for cultural diversity, improvement of care quality, and empowerment of nurses in independent decision-making. Beliefs include transparency, accountability, professional development, and the application of modern technologies in patient care [7,9].
Program Mission	To train specialized, committed, and competent nurses in medical–surgical care; to prepare them for educational, research, and managerial roles; to respond to the needs of the health system; and to elevate the professional status of nursing in the country. The mission emphasizes preparing nurses sensitive to the health of individuals, families, and communities [4,18-19].	To train professional nurses competent in adult clinical care, nursing leadership, and participation in health policy-making; to address the shortage of specialized nurses; and to improve the quality of nursing education in the country. The mission focuses on developing clinical, ethical, communicative, and technological competencies [7,9].
Program Vision	To achieve a leading scientific and professional position in the region within the next decade; to enhance educational standards, research output, and care services; and to become a regional reference center for specialized nursing education. The vision emphasizes sustainable development, educational innovation, and responsiveness to community needs [19].	To elevate the status of nursing within Pakistan's health system; to increase the number of specialized nurses; to align with international standards; and to train nurses capable of delivering safe, culturally responsive, and high-quality services in complex clinical environments. The vision emphasizes strengthening the scientific and professional capacity of nurses at both national and international levels [7,9].

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2. General Objectives and Professional Orientation

The general objectives of graduate nursing programs act as a roadmap for developing professional identity and clinical expertise. While both nations aim to produce highly skilled nursing professionals, their strategic priorities diverge to meet local health system demands. The Iranian curriculum is characterized by a strong emphasis on clinical specialization within the medical–surgical domain, aiming to integrate research and management within a specialized clinical framework. Conversely, the Pakistani MSN program adopts a broader, multi-dimensional objective, prioritizing the mastery of health informatics, modern technologies, and leadership in complex clinical environments. This distinction highlights a move toward high-tech, multidisciplinary care in Pakistan, compared to a focus on specialized clinical depth and ethical commitment in Iran. These comparative objectives are summarized in Table 2.

Table 2. Comparative Analysis of General Objectives: Iran's Specialized Medical–Surgical Nursing Curriculum vs. Pakistan's Generalist MSN Program

Nursing Program Characteristic	Iran	Pakistan
General Objectives	The primary objective of the MSN program in medical–surgical nursing in Iran is to train specialized, committed nurses who are fully aware of ethical and professional principles and capable of delivering high-quality clinical care in the field of medical–surgical nursing. The program emphasizes the enhancement of educational, research, and managerial competencies, preparing graduates to assume roles in teaching, research, management, and clinical practice within the national health system. Key objectives also include the application of research findings in clinical decision-making, patient and family education, and effective collaboration with other members of the healthcare team [4,11,20].	The MSN program in Pakistan is designed to prepare professional nurses capable of providing both direct and indirect care to adult patients in complex clinical environments. The program emphasizes the advancement of theoretical knowledge and practical skills, the use of modern technologies and health informatics, and active participation in multidisciplinary healthcare teams. Graduates are prepared to assume leadership, educational, and research roles within the health system. Adherence to ethical, cultural, and legal principles in the delivery of nursing services constitutes a core foundation of this program [7,9].

3. Admission Requirements and Enrollment Procedures

The selection process for graduate nursing candidates reflects the educational priorities and administrative structure of each nation's health

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system. A significant divergence is observed in the admission mechanisms of the two countries. Iran employs a highly centralized, examination-driven system, where academic merit is primarily determined through a national entrance exam administered by Ministry of Health and Medical Education (MoHME). In contrast, Pakistan utilizes a decentralized, professional-oriented approach, prioritizing clinical experience (1–2 years) and professional registration. While Iran's system focuses on theoretical proficiency and academic ranking, the Pakistani model emphasizes on clinical readiness, professional recommendations, and holistic assessments including interviews and motivation letters. This highlights a shift from a purely academic entry in Iran to a competency-based entry in Pakistan. These differences are detailed in Table 3.

Table 3. Comparison of Admission Requirements and Procedures between Iran's Specialized Medical–Surgical Nursing Curriculum and Pakistan's Generalist MSN Program

Admission Characteristic	Iran	Pakistan
Basic Admission Requirements	Applicants must hold a continuous or non-continuous Bachelor's degree in Nursing approved by the Ministry of Health and Medical Education. The degree must be obtained from accredited domestic or international universities recognized by the Ministry [4].	Applicants must hold a Bachelor of Science in Nursing (BSN) degree from accredited institutions. In addition, a minimum of one to two years of full-time clinical experience in healthcare settings is mandatory [7].
Admission Mechanism	Admission is conducted through the national entrance examination administered by the Ministry of Health and Medical Education. In some universities, a scientific interview is also considered as a second stage of evaluation [4,6,20].	Admission is independently managed by universities and includes review of academic credentials, scientific interviews, professional recommendation letters, and assessment of applicants' motivation and educational competencies [7,9].
Initial and Complementary Evaluation	Initial evaluation is based on the score obtained in the specialized written examination. In some universities, submission of physical and mental health certificates, identity documents, and professional records is also required [4,20].	Applicants must provide supplementary documents including a criminal clearance certificate, vaccination records (influenza, tuberculosis), CPR certification, and physical health clearance. Additionally, possession of RN (Registered Nurse) licensure and clinical experience within the past 3–5 years is required for admission in certain tracks [7].
Tuition Fees	In public universities, full-time programs are tuition-free. Tuition fees are required for self-funded programs and Islamic Azad University. The amount varies depending on the type of university and program [4,6].	Tuition fees vary across public and private universities. Some institutions offer MSN programs specifically designed for professional advancement and international student recruitment, which require full tuition payment [7,9].

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4. Curricular Structure, Credits, and Pedagogical Approaches

The structural organization of a curriculum dictates the depth and breadth of professional training. A comparative look at the MSN programs in Iran and Pakistan reveals significant differences in credit distribution and specialization frameworks. Iran's curriculum follows a specialized, research-intensive model (32 credits), where the mandatory thesis is a central pillar for producing indigenous knowledge. In contrast, Pakistan adopts a more extensive, generalist-integrated model (40–42 credits), which covers a wider range of clinical domains—from psychiatric and pediatric nursing to public health—within a single unified program.

While Iran uses a traditional, research-oriented approach based on the nursing process, Pakistan has transitioned toward a competency-based, blended learning framework that utilizes educational technology and interdisciplinary workshops. Furthermore, Pakistan's evaluation system is notably multi-dimensional, utilizing clinical logbooks and practical projects, whereas Iran remains primarily focused on written examinations and the final thesis. These structural nuances are detailed in Table 4.

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Table 4. Comparative Structure and Credit Requirements of Iran's Specialized Medical–Surgical Nursing Curriculum and Pakistan's Generalist MSN Program

Comparison Element	Iran	Pakistan
Responsible Authority	Ministry of Health and Medical Education; Supreme Council for Medical Education Planning [4].	Higher Education Commission and Pakistan Nursing and Midwifery Council (PNMC) [7].
Program Duration	2 years depending on university and type of thesis [19,21].	2-3 years full-time [7].
Total Credits	32 credits over 4 semesters (2 years): 22 core, 6 elective, 4 thesis [4].	Approximately 40–42 credits over 4 semesters (2 years): 31 theoretical, 12 practical, workshops, 6 research project credits, and teaching practicum [7].
Course Types	Nursing ethics and professional relations; nursing theories and models and their application; nursing service management in clinical settings; clinical teaching methods; clinical pharmacology; pathophysiology; advanced health monitoring methods; adult care for acute and chronic conditions (I & II); nursing role in complementary and alternative medicine; nursing role in civil defense; specialized practicum; thesis [4,21].	A comprehensive and unified MSN program covering diverse nursing domains: theoretical, workshop-based, research, interdisciplinary education, clinical care, educational technology, public health, psychiatric nursing, nursing management. Courses include advanced pathophysiology, advanced pharmacology, advanced health assessment, nursing theories and models, nursing research and evidence-based practice, biostatistics, leadership and management in nursing, principles of teaching and learning, advanced medical–surgical nursing, psychiatric nursing, pediatric nursing, maternal and neonatal nursing, critical care nursing, electives depending on university, thesis or research project [7,9].
Electives	Advanced nursing in cardiology, respiratory, gastrointestinal, endocrine, renal and urinary, oncology, neuromuscular systems [4].	Electives in advanced care, community health, educational management [7].
Mandatory Workshops	Nurse and law; professional communication; conflict management; clinical decision-making; evidence-based care [4,21].	Skills workshops in communication, ethics, educational technology, clinical decision-making [7,9].
Educational Approach	Research-oriented, nursing process–based, with emphasis on professional ethics and specialized training [21].	Competency-based, blended learning, use of modern technologies, interdisciplinary education [7,9].
Student Evaluation	Written exams, oral exams, clinical evaluation, report writing, thesis [4,21].	Written exams, clinical evaluation, scientific presentations, thesis. Multi-dimensional evaluation including projects, practical work, presentations, workshop participation, and clinical activity logbooks [7].
Program Administration	Centralized, admission through national entrance exam of the Ministry of Health and Medical Education [4,21].	Decentralized, managed independently by universities, including scientific interviews, review of professional records, and motivation letters [7,9].
Specializations	The medical–surgical MSN track in Iran focuses on advanced clinical care for adults with acute and chronic conditions, aiming to train nurses with competencies in clinical decision-making, teaching, management, and research [4].	Unlike Iran, where specializations are formally defined, Pakistan integrates specializations informally within a unified program through specialized courses. This structure enables graduates to acquire multi-faceted skills in clinical, educational, and managerial domains, including nursing education, public health, nursing management, and advanced care [7].

5. Instructional Strategies and Evaluation Methodologies

The effectiveness of a curriculum is largely determined by how knowledge is delivered and

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assessed. A comparison of pedagogical approaches shows that while both countries utilize core methods like clinical training and workshops, the integration of technology differs significantly. Iran's instructional model remains largely traditional, with a heavy reliance on face-to-face lectures and conventional clinical supervision. In contrast, Pakistan has embraced a modern, digital-first approach, extensively utilizing Learning Management Systems (LMS), blended learning, and virtual platforms to facilitate education.

Furthermore, the evaluation of student performance in Pakistan is more process-oriented and multi-dimensional, incorporating clinical logbooks and interdisciplinary peer assessments. In Iran, evaluation is more product-oriented, focusing heavily on written exams and the formal defense of a research thesis. These pedagogical and assessment nuances are summarized in Table 5.

Table 5. Comparative Analysis of Teaching Strategies and Evaluation Methods between Iran's Specialized Medical–Surgical Nursing Curriculum and Pakistan's Generalist MSN Program

Comparison Element	Iran	Pakistan
Teaching Strategies	Lectures, group discussions, clinical training in hospitals, simulation, skill-based workshops, student presentations, case studies [4,21-22].	Blended learning (face-to-face and online), clinical simulation, problem-based learning, team-based learning, interdisciplinary workshops, virtual education [7,9].
Use of Educational Technology	Limited to PowerPoint, educational videos, and online testing systems in some universities [4,21-22].	Extensive use of learning management systems (LMS), virtual education, clinical simulators, digital resources, and online libraries [7,9].
Theoretical Evaluation	Written exams, oral exams, classroom presentations, article analysis, report writing [4,21-22].	Written exams, group presentations, case analysis, online tests, participation assessment [7,9].
Practical/Clinical Evaluation	Clinical observation, report writing, implementation of the nursing process, evaluation by clinical instructors, specialized practicum [4,21-22].	Clinical instructor evaluation, skill-based tests, clinical activity logbooks, case reports, multi-dimensional assessment [7,9].
Research Evaluation	Thesis writing, scientific defense, methodological evaluation, peer review [4,21-22].	Research project, thesis or article writing, scientific presentations, evaluation of research ethics [7,9].
Role of Faculty in Teaching	Instructor as guide, evaluator, subject specialist, and clinical supervisor [4,21-22].	Instructor as facilitator, skill trainer, educational advisor, and interdisciplinary supervisor [7,9].
Skill-Based Workshops	Nurse and law, professional communication, conflict management, clinical decision-making, evidence-based care (4,21-22).	Communication skills, professional ethics, educational technology, clinical decision-making, interdisciplinary training [7,9].
Student Participation	Classroom presentations, participation in discussions, article writing, clinical practicum [4,21-22].	Participation in group projects, scientific presentations, clinical activities, interaction in virtual classes [7,9].

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6. Expected Graduate Competencies and Professional Roles

The final outcome of any MSN program includes a set of competencies acquired by its graduates, which determines their readiness for advanced professional roles. While both curricula aim to develop multifaceted skills in clinical care, research, and management, their focal points reflect different priorities [1].

Iran's graduates are prepared as specialized clinical experts, with a unique emphasis on the nursing process, palliative care, and Islamic professional ethics. Their roles are primarily geared toward specialized hospital units and academic positions. Furthermore, while Iran emphasizes "Civil Defense" (Passive Defense) as an integral part of its Medical–Surgical Nursing curriculum based on the Ministry of Health guidelines [4]—preparing graduates to sustain professional nursing functions during natural disasters, pandemics, and security crises—the general MSN program in Pakistan does not appear to include a similar structured component.

In contrast, graduates in Pakistan are trained as versatile nursing leaders, with strong competencies in evidence-based decision-making and the utilization of global health technologies. A distinctive feature of the Pakistani program is its focus on cultural diversity and international leadership roles, preparing nurses to act as clinical specialists and consultants at both national and international levels. Furthermore, Pakistan prioritizes "Quality Improvement" in care delivery [7]. These competency domains are compared in Table 6.

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Table 6. Comparison of Graduate Expectations and Competencies: Iran's Specialized Medical–Surgical Nursing Curriculum vs. Pakistan's Generalist MSN Program

Competency Domain	Iran	Pakistan
Clinical Competency	Provision of specialized nursing care for adults with acute and chronic conditions; implementation of the nursing process; health monitoring; interpretation of clinical signs; application of complementary medicine and palliative care [21-22].	Delivery of safe, effective, and evidence-based care in clinical and community settings; competency in clinical decision-making; utilization of modern technologies in patient care [7,9].
Educational Skills	Patient, family, and peer education; design and evaluation of clinical training programs; participation in academic teaching [21-22].	Ability to teach theoretical and practical courses; participation in clinical education; application of innovative teaching methods and learning technologies [7,9].
Research Competency	Design and implementation of applied research; thesis writing; data analysis; contribution to nursing knowledge production [21-22].	Conducting research projects; writing scientific articles; participation in interdisciplinary research; use of clinical data to improve care [7,9].
Managerial Skills	Management of nursing services; organization of healthcare teams; participation in health policy-making; crisis management and civil defense [21-22].	Leadership of nursing teams; human resource management; involvement in health policy development; quality improvement in care delivery [7,9].
Professional Communication	Establishment of humane and Islamic communication with patients, families, and healthcare teams; adherence to professional ethics and human dignity [21-22].	Effective communication with patients, families, and colleagues; adherence to ethical principles, social justice, and respect for cultural diversity [7,9].
Social and Community-Oriented Role	Health education in the community; participation in public health promotion; family-centered and community-based care [21-22].	Competency in community-based care; participation in public health programs; promotion of health among vulnerable populations [7,9].
Readiness for Professional Roles	Engagement in teaching, research, management, and clinical practice; readiness for faculty membership and specialized healthcare centers [21-22].	Preparedness for advanced roles such as clinical nurse specialist, nurse educator, nursing leader at national and international levels [7,9].

7. Synthesis of Comparative Findings

The final stage of this comparative analysis involves a synthesis of the key components to identify the juxtaposition between the two nursing education systems. The synthesis reveals that while there is "relative similarity" in the ultimate goals—such as training nurses for clinical, educational, and managerial roles—the administrative and pedagogical pathways remain distinctly different. The most significant "divergence" lies in the structural and philosophical approach: Iran's model is built on a specialized, research-driven framework with a centralized admission system, whereas Pakistan's model is a competency-based, generalist framework that prioritizes clinical experience and decentralized evaluation. This synthesis, which

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provides a macro-view of the curriculum components, is summarized in Table 7.

Table 7. Synthesis of Key Similarities and Differences: Iran's Specialized Medical–Surgical Nursing Curriculum vs. Pakistan's Generalist MSN Program

Curriculum Component	Iran	Pakistan	Status
Educational Philosophy	Grounded in human dignity, Islamic ethics, and health equity [4,21-22].	Grounded in professional excellence, leadership, and lifelong learning [7].	Difference
Professional Roles of Graduates	Nurse educator, researcher, manager, clinical nurse [4,21-22].	Nurse educator, leader, clinical specialist, clinical consultant [7,9].	Relative similarity
Program Duration	2 years, 32 credits (28 coursework credits + 4 thesis credits) [4,22]	2–3 years, 40–42 credits without thesis [7].	Difference
Course Structure	Combination of theoretical, practical, clinical courses, and thesis [4,22].	Combination of theoretical, practical, and clinical courses, without thesis [7].	Difference
Educational Approach	Nursing process–based, Islamic ethics, community-oriented care, research-focused [4,21-22].	Competency-based, interdisciplinary, technology-oriented, evidence-based care [7,9].	Difference
Program Objectives	Training specialized nurses in education, research, management, and clinical practice [4,21-22].	Training professional nurses in clinical care, education, leadership, and research [7,9].	Relative similarity
Expected Competencies	Implementation of nursing process, patient education, service management, clinical research [4,21-22].	Safe and competent care, leadership of healthcare teams, clinical education, applied research [7,9].	Relative similarity
Student Evaluation	Written exams, oral exams, clinical observation, thesis [4,22].	Written exams, report writing, clinical projects, without thesis [7].	Difference
Admission Requirements	Bachelors in Nursing + national entrance exam of Ministry of Health and Medical Education [4,22].	Bachelors in Nursing + clinical experience + scientific interview [7,9].	Difference

Discussion

The findings of this comparative study reveal that although the specialized Master's curriculum in medical–surgical nursing in Iran and the generalist MSN program in Pakistan share similarities in their overarching goals, significant divergences exist in their educational philosophies, curriculum designs, admission criteria, and evaluation approaches. These differences reflect not only the distinct health policy frameworks of each nation, but also highlight a contrast between a clinical specialization model and a leadership-oriented generalist framework.

<mark>In terms of educational philosophy, Iran's curriculum is deeply rooted in religious teachings, Islamic–Iranian culture, and family-centered care [4-5]. Nursing is perceived as a moral mission,

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emphasizing on the spiritual dimensions of patient dignity [4]. Conversely, the philosophy of Pakistan's generalist MSN is shaped by international models aligned with the standards of Higher Education Commission. The focus is on developing professional competencies, critical thinking, and preparing nurses as leaders and decision-makers [7-8]. This dichotomy is not unique to Iran and Pakistan. Similar tensions between culturally endogenous versus internationally oriented philosophies have been observed in comparative studies of nursing education in Turkey and the USA [11], as well as in Iran compared to Australia [12] and Canada [18]. For instance, Tajabadi et al. [11] found that while Iranian nursing programs emphasize on spiritual care grounded in local values, Canadian programs prioritize evidence-based leadership competencies aligned with global standards. Thus, while Iran adopts a culturally endogenous perspective, Pakistan pursues a philosophy geared toward international standards and leadership development—a divergence that mirrors broader patterns between developing and developed nursing education systems [5,15].

Regarding curriculum structure, Iran's specialized program consists of 32 credits with a heavy emphasis on clinical depth in medical-surgical care [4]. In contrast, Pakistan's 36-credit generalist program prioritizes a broader scope of competencies [7]. As established in the methodology, the functional equivalence between these two models lies in their shared prioritization of adult clinical care. When compared with international benchmarks, Iran's credit distribution more closely resembles that of specialized programs in the USA, such as those at the University of Pennsylvania [20] and Johns Hopkins University [24], where clinical specialization is accompanied by a thesis requirement. Conversely, Pakistan's generalist model aligns more with the MSN programs in Australia [12] and the University of Alberta [18], where the emphasis is on leadership and applied research rather than a standalone thesis. The inclusion of a mandatory research thesis in Iran facilitates the generation of indigenous knowledge, whereas Pakistan's preference for group projects and applied research links academic inquiry more directly to clinical problem-solving, aligning with

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WHO recommendations on integrating education and practice [15].

Another striking difference was identified in admission systems. Iran relies on a centralized, theory-driven national examination [4-5]. In contrast, Pakistan's admission process for the generalist MSN emphasizes on professional work experience and clinical competency [7,9]. This finding is consistent with previous comparative studies. For instance, Dehghannezhad et al. [13] reported that emergency nursing programs in the USA place greater weight on professional experience compared to their Iranian counterparts. Similarly, Ashrafi et al. [12] found that Australian critical care nursing programs require at least one year of clinical experience prior to admission, whereas no such requirement exists in Iran. In a comparison with the University of Toronto, Tajabadi et al. [11] noted that Canadian admission systems prioritize clinical competency over theoretical examinations, aligning more closely with Pakistan's model. Furthermore, Arian et al. [24] demonstrated that Johns Hopkins University uses a holistic admission process that evaluates professional experience alongside academic records—a practice absent in Iran's centralized examination system. These international comparisons suggest that Pakistan's experience-based admission aligns with global trends, while Iran's theory-driven approach remains an outlier among countries seeking to enhance clinical readiness [5,15].

Admission based on professional experience, as seen in Pakistan, is not an isolated phenomenon but rather reflects a broader international standard adopted by leading nursing programs worldwide. Comparative evidence from Australia [12], the USA [13,24], Canada [11,18], and the United Kingdom [5] consistently demonstrates that candidates with prior clinical experience exhibit more sophisticated understanding of clinical realities, better critical thinking skills, and higher readiness for advanced practice roles. For example, Ashrafi et al. [12] reported that Australian master's programs in critical care nursing attribute their graduates' high clinical competence directly to the requirement of at least one year of bedside experience prior to admission. Similarly, Nabizadeh-Gharghozar et al. [18] found that the University of Alberta's MSN program values

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clinical experience as a predictor of success in leadership and advanced practice roles. Taghlili et al. [20] compared the University of Pennsylvania's admission system with Iran's and concluded that professional experience enhances students' ability to integrate theory with practice. In contrast, Iran's exclusive reliance on a national entrance examination—a system also observed in some Asian countries but criticized by the WHO for neglecting clinical competency [15]—may inadvertently select candidates with strong theoretical knowledge but limited practical judgment [5,10]. Therefore, adopting an experience-weighted admission model, similar to Pakistan and other developed nations, could strengthen Iran's specialized nursing programs.

Teaching and evaluation strategies also reveal a contrast between traditional and modern paradigms. While Iran is making strides toward evidence-based teaching, it remains largely lecture-dependent [5,11]. Pakistan's model incorporates more diverse strategies such as blended learning and clinical simulation [7,14,24]. This divergence is not unique to Iran and Pakistan. In a comparative study of Iranian and Australian nursing curricula, Ashrafi et al. [12] found that Australian programs extensively use simulation-based and problem-based learning, whereas Iranian programs rely primarily on lectures. Similarly, Nabizadeh-Gharghozar et al. [18] reported that the University of Alberta's nursing program integrates competency-based evaluation with direct observation of clinical performance—a strategy also adopted in Pakistan's MSN curriculum [7]. Dehghannezhad et al. [13] compared emergency nursing education in Iran and the USA and noted that American programs use high-fidelity simulation and objective structured clinical examinations (OSCEs) as standard evaluation methods, while Iranian programs continue to emphasize on written examinations. Furthermore, Farsi et al. [5] conducted a review of comparative studies and concluded that Iran lags behind developed countries (including the USA, Canada, Australia, and the UK) in adopting modern teaching methodologies, whereas Pakistan has made more progress in this area due to its alignment with HEC international standards [7,8]. Consequently, Pakistan's competency-based evaluation, which focuses on direct observation of clinical performance, equips graduates with greater

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readiness for real-world practice compared to Iran's predominantly grade-oriented system [4,22-23].

Despite the insights provided, this study has certain limitations. First, the analysis was exclusively based on official curriculum documents and institutional websites; therefore, the "enacted curriculum" in clinical and academic settings may vary from these written standards. Second, the study did not capture the perspectives of students or faculty through interviews, which could have provided a deeper understanding of the practical challenges. Third, access to certain internal university reports in Pakistan was limited. Furthermore, a significant limitation of this study is the exclusion of "hidden curriculum," particularly concerning the clinical environments, the autonomy of nurses, and their specific roles within these settings in Iran and Pakistan. These factors can profoundly influence the practical learning experiences of students and may differ substantially between the two countries, potentially impacting the real-world application of curriculum content [5,8]. Similar limitations have been acknowledged in other comparative studies of nursing education [6,12,18,20], suggesting that future research should employ mixed-method approaches to bridge the gap between the intended and achieved curricula, incorporating qualitative data from students, faculty, and healthcare professionals to explore the influence of clinical context and hidden curriculum.

Overall, Iran demonstrates strengths in curriculum localization and professional ethics, while Pakistan has made significant progress in leadership and competency-based education. Combining these strengths could yield an effective model for nursing education in the region. This conclusion is consistent with multiple comparative studies. Jouybari et al. [6] emphasized that Iran must adopt modern teaching and evaluation methods to align with global trends, while Ashrafi et al. [12] recommended that Iranian programs incorporate clinical experience into admission criteria—a feature already present in Pakistan's system. Taghlili et al. [20] and Arian et al. [24] similarly concluded that Iranian nursing education would benefit from adopting competency-based evaluation strategies used in top-tier US programs. These findings are also aligned with the global strategic directions established by the WHO

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[15] and the core competencies outlined by the AACN [16].

In conclusion, nursing education in both countries is moving toward modern paradigms, yet targeted reforms are required. For Iran, priority areas include incorporating professional experience into admission, expanding blended learning, and strengthening leadership and health policy skills. For Pakistan, opportunities exist to deepen clinical specialization and strengthen the integration of Islamic ethical principles into the curriculum. Implementation of these reforms requires close collaboration among universities and accreditation bodies to elevate nursing education to international standards [5,24]. As noted in the WHO global strategic directions [15] and supported by comparative evidence from the USA, Australia, and Canada [11-13,18,20], neither country's model is inherently superior; rather, each can learn from the other and from international best practices to develop a contextually appropriate, high-quality nursing education system.

Conclusion

A comparative analysis of the specialized Master's curriculum in medical–surgical nursing in Iran and the generalist MSN program in Pakistan demonstrates that, despite shared overarching goals—namely, the preparation of committed nurses grounded in ethical and scientific principles—the two countries follow distinct pathways. Iran's educational philosophy is deeply rooted in cultural values and professional ethics, tailored to national health needs, whereas Pakistan's generalist program prioritizes international competencies, clinical decision-making, and professional leadership.

In terms of curriculum design, Iran's specialized track emphasizes on indigenous knowledge production through a mandatory thesis, although the link between research and clinical practice requires further strengthening. Conversely, Pakistan's generalist model, by integrating applied research projects with education, facilitates the development of professional competencies within real-world care environments. Admission systems also diverge significantly: Iran relies primarily on centralized

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theoretical examinations, while Pakistan places substantial weight on clinical experience and professional registration. Similarly, Iran's teaching and evaluation methods remain largely traditional and grade-oriented, whereas Pakistan's generalist framework employs modern strategies such as blended learning, simulation, and performance-based assessment.

Based on these findings, Iran has made notable progress in localizing content and maintaining alignment between education and societal values. However, reforms in teaching methodologies and admission criteria are necessary to align with global nursing trends. Conversely, while Pakistan has advanced in adopting international competency-based standards, it requires greater attention to localizing its curriculum to better reflect regional cultur and health system nuances.

Overall, this study confirms that nursing education in both countries is evolving, yet qualitative improvement depends on integrating the strengths of both systems. Leveraging Iran's clinical and ethical depth alongside Pakistan's competency-based and innovative teaching approaches could provide a comprehensive model for redesigning graduate nursing programs in the region. Such an approach, supported by international collaboration, would not only enhance the quality of nursing education in Iran and Pakistan, but also contribute to raising educational and service standards across Southwest Asia.

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Conflict of Interest

The authors declare that they have no conflicts of interest regarding the publication of this article.

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