

Analysis of the Current Situation of Nursing Master's Education in Macau

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Abstract

Based on the author's experience of pursuing a Master's degree in Nursing in Macau, this article analyzes and summarizes the characteristics of nursing master's education in three Macau universities, providing references for the reform and development of nursing master's education in China. The article discusses aspects such as admission policies and training processes, program structure and curriculum content, curriculum design and format, teaching methods and learning experiences, and evaluation systems. The study finds that Macau's nursing master's education features flexible admission conditions and training processes; a curriculum setup and design that emphasizes interdisciplinary integration and the combination of "learning" and "application"; and the integration of various teaching methods with a diverse evaluation system. Its educational model highlights flexibility, practicality, and an international perspective, offering valuable insights for constructing a nursing master's education system with Chinese characteristics and world-class standards.

Keywords

Macau; Nursing; Master's Education; Curriculum Design; Teaching Methods; Internationalization; Comparative Study.

1. Introduction

Research published in *The Lancet* indicates that the educational structure of nurses directly impacts patient mortality rates, with a significant correlation between nursing staffing levels and patient outcomes[1]. Adequate nursing manpower and a reasonable structure of nursing talent are crucial for improving healthcare quality and ensuring patient safety[2]. With increasing global talent mobility, accelerated aging populations, and evolving disease spectra, societal demands for nursing professionals are becoming more internationalized, diversified, and specialized[3]. Nursing higher education, as the main pathway for cultivating talent that meets the needs of new-era healthcare reform and development, must timely transform traditional disciplinary education paradigms and innovate new educational models[4]. In the field of nursing education, universities in Macau emphasize international exchanges and cooperation, continuously optimizing talent cultivation models and improving the quality of talent development. The author, originally from mainland China and currently pursuing a Master's degree in Nursing at Kiang Wu Nursing College of Macau, is familiar with the curriculum design, teaching methods, project design, and course evaluation in both Macau and mainland China. This article compares and analyzes the characteristics of nursing master's education in Macau and mainland China, aiming to provide references for developing a nursing master's education system with Chinese characteristics and world-class standards.

2. Current Situation of Nursing Master's Education in Macau

Postgraduate nursing education in Macau was first established by Macau University of Science and Technology(MUST), followed by Macau Polytechnic University(MPU) and Kiang Wu Nursing College of Macau(KWNC), which subsequently began enrolling nursing master's students. Furthermore, the three universities in Macau mainly offer Master of Nursing Science programs and Master of Nursing (Specialist) programs in terms of training direction, as shown in Table 1. This article primarily discusses and compares the Master of Nursing Science education in Macau.

Table 1 Requirements for master's degree in nursing in 3 universities in Macao

School	Course type	Admission requirements	Teaching methods and assessments
MUST	Master of Science in Nursing	Obtained a bachelor's degree in nursing	1. Complete 10 basic compulsory courses in the first and second semesters, with a total of 30 credits. 2. Write original papers and defend them and pass the review.
MPU	Master of Science in Nursing	Bachelor's degree in nursing or related majors	1. 30 credits required to complete the course; 2. Write and submit an original project report and get it approved
	Master of Nursing Specialist Program	1. Macao resident; 2. Hold a nurse qualification recognition certificate issued by the competent authority in Macao; 3. Have at least 3 years of clinical nursing experience in Macao hospitals, community health centres and/or community medical service institutions	1. 30 credits required to complete the course; 2. Undertake a nine-week (360 hour clinical internship) in total; 3. Participate in nursing quality inspection and improvement, write and submit internship project reports, and pass them.
KWNC	Master of Nursing programme	1. Obtain a bachelor's degree in nursing; 2. Nurses with at least one year of nursing experience; or outstanding graduates of recent bachelor's degree in nursing; 3. Mainland students must take the National Unified Entrance Examination for Mainland Graduates, and their preliminary examination scores must meet the requirements stipulated by the state.	1. 30 credits required to complete the course; 2. Write original papers and defend them and pass the review.
	Nursing Applied Gerontology	1. Have a bachelor's degree or equivalent recognized by the academic committee; Preference will be given to those holding a bachelor's degree in health or social work-related professions (e.g. medicine, nursing, social work, physiotherapy, occupational therapy, psychological counselling, etc.). 2. Those who meet the following conditions are preferred: take the National Unified Entrance Examination for Graduate Students in the Mainland and meet the requirements stipulated by the state; or obtain a bachelor's degree in a related major in Macao	1. The credits required to complete the course are 30 credits; 2. Obtaining a master's degree is also subject to writing and submitting an original project report and being approved.
	Master of Advanced Nursing	1. Bachelor of Nursing degree from a tertiary institution;	1. The credits required to complete the course are 30 credits;

practice programme	2.At least three years of clinical nursing experience; 3.Mainland students need to take the National Unified Entrance Examination for Graduate Students in the Mainland and meet the requirements stipulated by the state; or obtain a bachelor's degree in a related major in Macao.	2.Obtaining a master's degree is still subject to writing and submitting an internship report after participating in clinical internship.
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2.1. Admission Policies and Training Process

Admission policies for nursing master's programs in Macau are relatively flexible; holding a Bachelor's degree in Nursing grants eligibility to apply. Specifically, Kiang Wu Nursing College of Macau requires mainland Chinese students to participate in the national postgraduate entrance examination for the current year with preliminary exam scores meeting national requirements, and to be a nurse with one year or more of work experience or an outstanding fresh graduate. Macau University of Science and Technology and Macau Polytechnic University require applicants to provide proof of foreign language proficiency test scores. After obtaining application eligibility, each university conducts interviews to assess foreign language skills and research capabilities, with a focus on translation ability of English literature and professional English proficiency.

When setting the training objectives for nursing master's programs, each university exhibits distinct characteristics based on its educational philosophy and program goals. For example, Kiang Wu Nursing College of Macau enhances students' international perspective and cross-cultural communication skills by offering internationally-oriented courses, providing overseas study opportunities (e.g., in Hong Kong, Portugal, Australia), and regularly organizing participation in international academic conferences. Taking Kiang Wu Nursing College of Macau—the oldest nursing college in Macau and the only one offering a nursing PhD program—as an example, the training process for nursing master's students in Macau is illustrated in Figure 1.

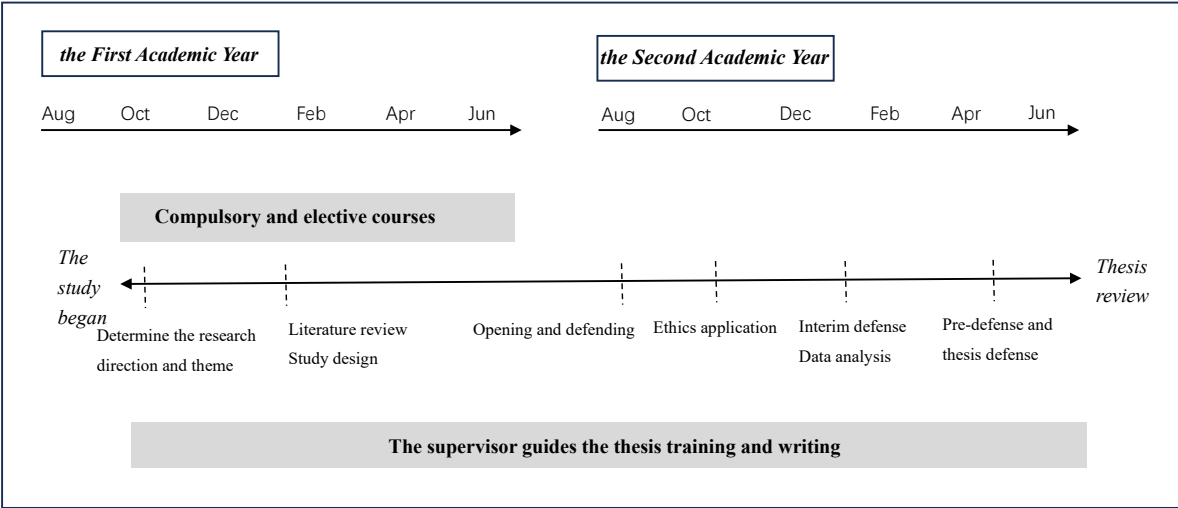


Figure 1 The training process of master's degree in nursing in Macao

2.2. Program Structure and Curriculum Content

The full-time program duration for nursing master's students at the three Macau universities (Macau University of Science and Technology, Macau Polytechnic University, Kiang Wu Nursing College of Macau) is typically 2.0 years. Kiang Wu Nursing College of Macau allows a maximum of 4.0 years, while Macau University of Science and Technology allows a maximum of 3.0 years.

All require completion of 30 credits and an original graduation thesis. The curriculum at these three universities consists of compulsory courses, elective courses, and a thesis/project report, as shown in Table 2. Students complete compulsory courses in the first and second semesters, and the graduation thesis or project report in the third and fourth semesters. In the curriculum design, emphasis is placed on developing students' self-directed learning and thesis-writing abilities. The development of self-directed learning is first built on a comprehensive mastery of knowledge. Therefore, in the first semester, universities typically set research methods or academic research courses as compulsory to give students a clear understanding and overall grasp of research methodologies, thesis classification, and standard writing procedures. In the second semester, courses like evidence-based nursing practice and statistical analysis are offered. Instructors guide students in evaluating and analyzing selected articles, help them complete research proposals, and through learning statistical analysis, enable students to master statistical methods in preparation for writing the graduation thesis in the third and fourth semesters.

Table 2 Curriculum Content for Nursing Master's Programs at Three Macau Universities

School	Compulsory	Elective	Thesis
MUST	Philosophy and Science of Nursing (3 credits), Advanced Nursing Practice (3 credits), Research Methods Essential for Nursing Professionals (3 credits), Pathophysiology (3 credits), Pharmacology and Therapeutics (3 credits), Advanced Health Assessment (3 credits), Health Education and Promotion (3 credits), Specialties on Professionalism and Ethics in Nursing Practice (3 credits), Health Policy (3 credits), Advanced Nursing Seminars (3 credits)	/	Thesis (12 credits)
MPU	Introduction to Advanced Nursing Practice (3 credits), Advanced Health Assessment (3 credits), Nursing Leadership and Management (3 credits), Evidence-Based Nursing Practice (3 credits), Research Methods and Ethics (3 credits), Nursing Education (3 credits),	Advanced Pathophysiology (3 credits), Advanced Clinical Pharmacology (3 credits), Advanced Health Education and Promotion (3 credits).	Project Report (9 credits)
KWNC	Changing Healthcare Environment (3 credits), Evidence-Based Nursing Practice (3 credits), Academic Research (3 credits), Statistical Applications (3 credits)	Clinical Teaching and Learning (3 credits), Nursing Leadership and Management (3 credits), Advanced Health Assessment (3 credits), Qualitative Research Methods and Data Analysis (3 credits), Innovation and Industrial Development (3 credits), Global Nursing Professional Issues and Trends (3 credits), Public Health and Infection Control (3 credits), Introduction to Advanced Nursing Practice (3 credits), Advanced Health Education and Promotion (3 credits), Geriatric Rehabilitation and Multi-Care (3 credits)	Graduation Thesis (9 credits)

2.3. Curriculum Design and Format

The curriculum design for nursing master's programs in Macau emphasizes the cultivation of students' comprehensive abilities. The course formats include lectures, seminars, tutorials, social practice experiences, multimedia, and online materials, facilitating the integration of theory and practice. Most courses require students to design projects and develop solutions or improvement plans (e.g., the Evidence-Based Nursing Practice course requires students to identify practical PICO questions and develop improvement plans after learning). Macau universities value broadening students' global perspectives. The curriculum design for nursing master's programs is centered on the three-dimensional goal of "Advanced Practice + Research Ability + Professional Development." Macau University of Science and Technology places the 12-credit thesis at the core, emphasizing the integration of evidence-based research and health policy. Macau Polytechnic University adds subjects like "Nursing Leadership and Management" and "Nursing Education," highlighting an application-oriented approach that balances evidence-based nursing and practical teaching skills. Kiang Wu Nursing College incorporates "Global Nursing Issues" and "Innovation and Industry Development" into compulsory courses, while retaining diverse electives like "Qualitative Research" and "Geriatric Rehabilitation," showcasing characteristics of internationalization, industry alignment, and cross-cultural care. The curriculum design of the three Macau universities aims to cultivate specialized leading talents with international perspectives, capable of independently conducting advanced nursing practice and research for the Guangdong-Hong Kong-Macao Greater Bay Area.

In terms of teaching format, all three Macau universities adopt "Chinese/English bilingual parallel" classrooms. Lectures and seminars are conducted bilingually, with teaching materials and readings provided primarily in English, supplemented by Chinese, ensuring students can flexibly switch between their native language thinking and English academic expression. The teaching teams consist of faculty with overseas doctoral or postdoctoral experience and short-term contracted foreign experts (covering backgrounds from countries such as the United States, the United Kingdom, Australia, Japan, etc.), directly embedding the latest international guidelines, evidence-based databases, and thesis writing standards into the classroom. Students are required to complete research design proposals in English and deliver full English group presentations, thereby mastering the pathways for submitting to international journals. Through bilingual immersion and cross-cultural interaction, students not only gain a global nursing perspective but also achieve alignment with international standards in academic English expression and writing, laying the linguistic and methodological foundation for subsequent multilateral research collaborations.

2.4. Teaching Methods and Learning Experience

In the teaching process of nursing postgraduate education, Macau universities employ flexible and diverse teaching methods such as group discussions, thematic seminars, tutorials, and thesis supervision systems. These methods encourage students to integrate the concept of people-centered holistic care throughout their learning journey from multiple fields, cultures, and perspectives. They develop the ability to proactively and independently plan, lead teamwork, adhere to evidence-based practice, and continuously learn and innovate in problem-solving. Through various course studies, students can integrate their acquired knowledge, demonstrating the curriculum objectives that combine knowledge/cognition, literacy/attitude, and practice/skills.

2.4.1. Learner-Centered Andragogy

Nursing postgraduate education in Macau mostly applies learner-centered andragogy, focusing on cultivating students' creativity and self-directed learning abilities. Andragogy is the art and science of helping adults learn. Unlike pedagogy for children, andragogy opposes rote learning and encourages adults to learn spontaneously in various environments[5]. Compared to

teacher-centered andragogy, learner-centered andragogy places students' self-directed learning at the core[6].

2.4.2. Team-based Learning (TBL)

Healthcare service is inherently a team-based practice, and nurses are key participants in healthcare delivery. Much research focuses on the role of nurses within interdisciplinary teams[7][8][9]. In Macau's nursing higher education, TBL is a commonly used teaching method. In TBL, students work in small groups to solve specific problems collaboratively. Over the past two decades, Team-Based Learning (TBL) has flourished in nursing schools worldwide[10]. Several review studies have confirmed that TBL is significantly more effective compared to traditional teaching methods[11][12][13]. TBL better guides students in conducting group discussions, encourages active participation, creates a lively classroom atmosphere, and effectively cultivates students' ability to actively acquire knowledge. Furthermore, upon completion of group assignments, universities conduct peer assessments. This process allows students to reflect on their own strengths and weaknesses in teamwork, while effectively compensating for the limitations of single-perspective teacher evaluation.

2.4.3. Flipped Classrooms (FC)

Flipped Classrooms (FC) are also a commonly used teaching method in the design of nursing master's programs at Macau universities. FC can enhance students' self-directed learning and communication and collaboration skills. Group PowerPoint presentations can reflect students' application and reflection on the knowledge learned. In a flipped classroom, students are no longer passive recipients of knowledge but become the protagonists of learning. They can share knowledge acquisition pathways, explain their understanding of the learned knowledge, design and implement practices, pose questions, and engage in in-depth discussions with teachers and classmates, thereby increasing each student's classroom participation[14]. At the nursing postgraduate education stage, university teachers gradually shift the focus of students from mastering foundational knowledge to contemplating the differences between theoretical knowledge and practical application. Moreover, student explanations in the flipped classroom spark intellectual exchange between teachers and students, thereby optimizing teachers' precise grasp of teaching difficulties and effectively helping students formulate more objective and concrete questions.

2.5. Evaluation System

To obtain a Master's degree in Nursing in Macau, students must complete course studies (earning sufficient credits) and write a graduation thesis. To effectively understand and assess student learning, Macau's nursing master's education employs a variety of assessment methods. These often include final essays, exams, practical operations, student presentations, group discussions and reports, and peer assessments to evaluate the course learning of nursing master's students. Through these diverse assessment methods, continuous feedback is provided on the learning process and outcomes, guiding students in their learning direction and methods, cultivating their literature review skills, honing their critical thinking, analytical and problem-solving abilities, and enhancing their writing, presentation, teamwork, and communication skills.

Thesis writing in the third semester is one of the important assessment methods for academic nursing master's students in Macau, requiring students to be familiar with thesis writing formats and methods and to clearly and concisely articulate research questions. The graduation requirement for nursing master's students in Macau is to complete all courses and earn the required credits. Thesis review requires that the research topic holds significance for the nursing discipline, has clear research objectives and rationale, involves sufficient literature search and analysis, is conducted around the research objectives, adheres to required thesis formatting, and raises no ethical issues. While there is no mandatory requirement for students

to publish academic papers, great importance is placed on the thesis completion process. Simultaneously, Macau's nursing master's education focuses on cultivating research-oriented professionals, requiring students to read extensively, deeply understand the knowledge and frontier developments in their research area, and achieve comprehensive mastery. During the thesis writing period, there is a requirement for a fixed minimum number of meetings between the student and supervisor to discuss project progress and address questions. The frequent and close communication and interaction between supervisors and students helps students better complete their research projects.

3. Conclusion

Nursing master's education in Macau demonstrates characteristics of flexibility, diversity, internationalization, and practice-orientation in aspects such as admission policies, curriculum design, teaching methods, and evaluation systems. Its training model, which emphasizes students' self-directed learning ability, cross-cultural perspective, and research capabilities, provides valuable insights for nursing higher education. In the future, further attention should be paid to the long-term tracking and evaluation of its educational outcomes to promote the continuous optimization and development of nursing education.

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