

# Understanding the Learning Experience of Chinese Nursing Students in an English-Medium Instructional Program: Growth and Challenges

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## Research Article

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# Abstract

## Background

Most previous studies on English-Medium Instruction (EMI) in the healthcare field have shown diverse and sometimes contradictory results. There is limited research on the understanding of the educational impacts of EMI in different cultural contexts.

## Purpose

In depth explore the Chinese nursing students' learning experience under EMI teaching mode.

## Methods

Thirty-two undergraduate students from Nursing EMI program were selected using convenience sampling to participate in Focus Group Discussion (FGD).

## Results

Three major themes have been extracted: benefits of English Medium Instruction, challenges encountered during the process of Nursing EMI, students' suggestions on Nursing EMI. These three major themes encompass fifteen sub-themes.

## Conclusion

The Nursing EMI program has improved students' comprehensive professionalism and international competency, however, coping with using English as the medium of instruction in China's Nursing education remains in exploratory stage, and requires further educational revolution.

# Introduction

The general internationalization trend has underscored the imperative to improve the quality of Nursing education, cultivate nurses that are interculturally competent, and ultimately propel the actualization of global health.<sup>[1-4]</sup> As the most pivotal information carrier, English has been the dominant language in the globalized medical realm,<sup>[5],[6]</sup> where substantial academic texts, sources and materials are presented in English,<sup>[7]</sup> which is of paramount significance for the implementation of Evidence-Based Practice in Nursing.

The utilization of English as a medium of instruction (EMI) by Higher Education Institutions (HEIs) in countries where English is not the primary or official language is a prevalent trend that is progressively escalating worldwide.<sup>[8]</sup> Over the past few decades, universities in European countries such as Germany<sup>[9]</sup> and Netherland<sup>[10]</sup> have promoted the English-medium programs extensively, followed by universities in Asian regions such as Korea,<sup>[11]</sup> Vietnam<sup>[12]</sup> and Taiwan, China,<sup>[13],[14]</sup> which have

dramatically increased the number of English-medium courses. With the rapid evolution of society and growing recognition of Nursing,<sup>[15]</sup> EMI courses of Nursing have successively been introduced in Mainland, China, for example, the Bilingual Nursing Program of Guangzhou Medical University, where academic knowledge are delivered in both English and Chinese. In 2013, an EMI program called “Nursing All-English Program” was established in X(referring to a specific University Medical College) aimed at training a cohort of excellent nursing professionals who can adapt to the rapid advancements in medical and nursing sciences and technology, utilize English to master professional knowledge, and have the potential to advance the internationalization of China's nursing discipline.

However, in various non-English-speaking countries, debates have arisen regarding the choice of language of instruction for medical education, whether English or the native language.<sup>[16]-[18]</sup> Most previous studies on EMI in the healthcare field have shown diverse and sometimes contradictory results, such as positive impacts and attitudes in some cases, and negative impacts and attitudes in others, as well as preferences for either monolingual or bilingual approaches.<sup>[19]</sup> Therefore, this study aims to explore the learning experiences of nursing students in Mainland China participating in EMI courses through in-depth interviews, to enhance the understanding of the educational impacts of EMI in different cultural contexts, and to further investigate the application of EMI in healthcare.

## **Participants and Methods**

### **1.1 Research Participants**

Using convenience sampling, 32 undergraduate students from Nursing EMI Program in X(referring to a specific University Medical College) were recruited as the participants of this study. Inclusion Criteria: (1) Undergraduate students from Nursing EMI program in X(referring to a specific University Medical College) (2) participants who provided informed consent. Exclusion Criteria: (1) Students who were suspended from school (2) Participants who dropped out before the study commenced. The sample size was determined based on data saturation, which occurs when the analyzed data begins to repeat and no new themes emerge. For the sake of confidentiality, potentially identifiable information was not recorded and each participant was assigned a code number from N1 to N32. Included participants were divided into 6 focus groups, Focus Group A – C: 4 students each group, Focus Group D – F: 7 students each group.

### **1.2 Research Methods**

#### **1.2.1 Identifying the Interview Outline**

A qualitative study was conducted using thematic analysis, which was deemed appropriate for this research due to its ability to identify and interpret patterns of meaning within qualitative data. Specifically, focus group interviews were chosen to collect data. The interactive nature of focus groups can encourage participants to elaborate on their responses based on the viewpoints expressed by peers,

thereby enriching the data with diverse perspectives and reinforcing the validity of the findings. This method was suitable for understanding the shared experiences of students in the Nursing EMI program. The outline of the interview was determined by reviewing literature and consulting with specialists in Nursing Education, as follows: (1) What kind of experience do you think it is to participate in Nursing EMI learning? (2) Through Nursing EMI learning, in what aspects have you improved? (3) What difficulties do you think there are in the process of learning? (4) What aspects of Nursing EMI teaching do you think need to be improved?

## **1.2.2 Data Collection**

Between January 20th to February 8th, 2024, group-focused, semi-structured interviews were conducted by one chief researcher who had received professional training and other two assistant researchers. Interviews were performed in a conference room, guaranteeing the environment were quiet, comfortable, and free from disturbance. A semi-structured interview schedule was used to collect data. Prior to the interviews, the schedule was arranged according to the interviewees' preferences, besides, all the participants were informed with the purpose and duration of the interview, and consented to being audio recorded. The interviews were conducted in Mandarin Chinese. At the beginning of each interview, the interviewer will explain the main content of the interview. Afterwards, discussions oriented towards the outline of the interview began. During the 60-to-90-minute interview for each group, interviewers had to continually observe and mark down the participants' facial expressions and emotional changes, while contemporaneously collecting information, and their feelings and attitudes had to be clarified and confirmed. Under the premise of no digression derived, every participant was encouraged to express opinions. The audio recordings were initially analyzed in Chinese, and subsequently, the findings were translated into English for further analysis and reporting. The translation process involved senior nursing education experts and native English-speaking educators for quality control, ensuring the accuracy of the translated content.

## **1.2.3 Data Analysis**

To establish the credibility and auditability of the study, interview notes, recordings, verbatim transcripts and coding were used at various stages of data analysis. Within the 24 hours after interviews, interviewer transcribed the sound recording into texts, which were then checked by other researchers. Confirmability was guaranteed by a clear audit trail of all data and its sources. If inconformity occurred, researchers had to discuss and return to respondent for double confirm. To further assist with the analytic process, regular meetings among the research team were held to determine the themes, with agendas and results clearly documented at each stage. Verbatim quotes, corresponded to each participant's code, were presented in the results, demonstrating authenticity of the data. Colaizzi's seven-step method was used to analyze the interview data: (1) Transcribed and read all the interview data meticulously (2) Extracted significant statements which pertain to the research (3) Summarized the significant statements and identified their meanings (4) Aggregated formulated meanings into theme clusters (5) Integrated themes into exhaustive description of phenomenon (6) Identified the fundamental structure of the phenomenon (7) Returned to participants for validation.

Dependability was maintained by the consistency of the interview approach, using the same interview schedule and asking all participants the same questions.

## Results

### 2.1 Theme 1: Benefits of English Medium Instruction

#### 2.1.1 Enhancement of Comprehensive Ability

##### 2.1.1.1 Acquisition of Independent Learning Ability.

As the course unfolded, students' approach to learning has shifted, from a more passive and receptive mode to a more active and engaged one. Over time, students began to probe into the key points of each course, and spontaneously search relevant information concerning what they showed interest in.

For instance, "I think I had been of passive learning since I was a freshman, in other words, I accepted and followed whatever teachers told, but in my junior year, I started to have my own thinking, studying proactively rather than simply receiving, and I would initiatively search the content that I was interested in.", said N8.

On the other hand, in the context of the EMI program, a selection of courses employed innovative teaching strategies such as the Flipped Classroom and Problem-Based Learning (PBL), highlighting the active engagement and central role of students in their learning processes. Students were required to study and think centered on cases and problems, which on largest extent helped students exert their subjective initiatives, and improve their ability of independent learning, comprehensive analysis, and creativity. In this way, students were able to put their knowledge into practice.

According to N4, "Just like dealing with actual patients, in PBL lessons, you had to obtain information from the given cases, analyze relevant test results, point out existing problems, make diagnoses, and propose solutions, using what you have learned to solve problems. After class, you had to do research, filling in the gap of the knowledge that you had not mastered, thus you had improved your ability of self-learning."

In addition, students indicated that it was of necessity to review after class for a better understanding of the knowledge, which reinforced their ability to learn initiatively.

For example, N9: " Proactive learning after class was necessary because EMI learning was challenging and difficult to comprehend thoroughly in class."

Meanwhile, the positive atmosphere of the class prompts students to initiatively learn and improve themselves.

Considering what N9 stated: "Students in the Nursing EMI program are all excellent learners, and what propels you to keep improving yourself proactively is the perception that you will be left behind if you spare any effort, for example, you would try to make better preparation for even an in-class presentation."

### **2.1.1.2 Mastery and Application of Academic English.**

Students' vocabulary of medical English has expanded, and the efficiency of reading English literature has increased. Meanwhile, their English listening and oral communication skills have improved to varying degrees.

To name a few, N2: "To master medical vocabularies was very challenging, but now we have made elementary acquaintance with them. I did not realize this until I took an IELTS test, the accumulation of medical terms during the EMI courses has made it less time-consuming to memorize the IELTS vocabulary."

N9: "Extensive reading and listening tasks in class have improved our vocabulary and listening comprehension imperceptibly."

The improvement of Academic English has presented its profound significance in students' learning. For example, their ability of searching and reading English literature have got accredited, establishing a robust foundation for English-medium learning and scientific research.

N5: "More importance has been attached to the enhancement of scientific research ability in the EMI program. We gradually developed a mindset for scientific research and took the initiative to undertake research projects."

N10: "With English as the sole medium to study, I had to search for international literature instead of limiting myself to Chinese literature, throughout this process my literature retrieval skills have been fortified."

### **2.1.1.3 Strengthening of Stress-Coping and Problem-Solving Ability.**

EMI students faced with a more unfamiliar learning environment, that is, using English as a Second Language (ESL), where they had to devise learning approaches independently to overcome challenges. Students have realized their gains during the process of seeking solution and adjusting negative emotion, which contributed to the improvement of their confidence and problem-solving ability, forming a positive feedback loop.

N4 stated: "Studying and taking exams in English, our academic pressure was much higher compared to using Chinese. To conquer the language barrier, we had to make substantial effort including adjusting our mental attitude while studying assiduously. During this process our stress resistance improved."

N10: "It is undeniable that the academic pressure under EMI was considerable, but I believe it can be an extrinsic impetus of motivating us to learn and develop better strategies to solve the problems we face."

#### **2.1.1.4 Cultivation of Leadership, Communication and Teamwork Skills.**

The EMI program has cultivated students' abilities to organize, communicate, and collaborate to accomplish assignments with others.

For instance, N7: "As a project leader, I strove to organize our group, distribute tasks, communicate timely, and finally we completed the task successfully, which made me feel that I have become independent."

N9: "The EMI courses included a significant number of daily group assignments, mirroring teaching methods used in foreign countries. These assignments have enhanced our abilities in various areas, particularly teamwork."

#### **2.1.1.5 Formation of Critical Thinking.**

Students have significantly improved their ability of critical thinking and clinical reasoning in lessons of involving scenario simulations, case discussions and hospital visits, where they combined the theoretical knowledge with clinical scenarios, pondered over the whole process of disease occurrence and development, oriented by cases, and analyzed problems from multiple perspectives, critically regarded the information presented to them, and identified the nursing problems as well as targeted nursing interventions for patients.

Specifically speaking, N3 stated: "I think my clinical thinking has been improved. Now I can integrate the patient's basic condition, past history, and current medical history, etc., and determine his existing problems, and then propose targeted nursing interventions."

N1: "As for some textbook knowledge which I did not agree with or understand, I would review literature from both domestic and foreign sources to have a better understanding, so as to make better judgement."

### **2.1.2 Growth in Confidence**

The enhancement of students' English proficiency, increased opportunities for self-expression, and the title "EMI student" have strengthened their confidence.

For example, N6: "Thanks to EMI courses, my spoken English has been practiced, and I have become more poised and confident when communicating with others in English. Additionally, there were a lot of opportunities to show ourselves in EMI courses, such as group presentations, which have boosted my confidence in participating in activities such as speech competitions."

N10: "When others heard about the Nursing EMI program, they were convinced that EMI students must be excellent. Many teachers held us in high regard, which effectively boosted our confidence."

Compliments from teachers urged students to elevate their self-expectation and self-demand, to meet the teachers' appraisal, students had to devote more effort to their study, which fortified their

learning autonomy and students acquired confidence in the process of refining their knowledge and capability.

### **2.1.3 Advancement of Students' Professional Identity and Expanse of Career Path**

EMI's lecturers were mainly highly-educated elites in nursing who imparted advanced knowledge and broadened students' views, and their experience studying abroad also boosted students' professional identity. Besides, students indicated that the title of the "EMI student" garnered them more encouragement and recognition from others, which has strengthened students' professional identity and faith in the prospect of Nursing profession.

N8 stated: " Inspired by the high-achieving EMI teachers, I became convinced that our developmental path would be broader in the future, and nursing students' sense of professional identity would subsequently improved."

N12: "The teachers I came into contact with in EMI courses were positioned at a relatively higher level in this field, which made me realize that careers for Nursing students can take various directions, and this has reinforced my sense of professional identity."

### **2.1.4 Enhancement of Global Vision and International Competence**

In the Nursing EMI program, foreign instructional educators and international exchange projects have facilitated students' insights into the professional advancement worldwide and learning conditions of Nursing students at a global extent.

N9: "We need an approach like the Nursing EMI program to provide us with insight into what advanced Nursing knowledge and theories are, otherwise, we would have been stuck with Chinese perspectives, or rarely get to know those in foreign countries, which would hinder the development of the industry."

N11: "Now I have more confidence in applying for further study or employment abroad. If I had not joined the Nursing EMI program, I would never have had this idea."

The Nursing EMI program has helped the students absorb internationally advanced knowledge, thinking, and widen their global vision, which was conducive for our domestic Nursing to meet with the international standard, and prevented stagnancy.

## **2.2. Theme 2: Challenges Encountered During the Process of Nursing EMI**

### **2.2.1 Language Barrier Hindering the Reception and Transmission of Information**



For certain teachers and students with weaker English proficiency, using English as an instructional medium might lead to ineffective knowledge transfer, thus impacting teaching effectiveness. After class, students needed to spend considerable time repeatedly consolidating the knowledge, which lowered the learning efficiency to a significant extent, exerting detrimental impact on students' enthusiasm for studying.

N8: "For students in Nursing non-EMI program, I think, 70% of the knowledge was absorbed during class, but maybe only 50% for students in the EMI program. After class, we needed more time to fill in the knowledge gap. Lessons taught by foreign teachers were even more challenging, because they tended to teach in a more divergent way, thus requiring more time to grasp the key points."

## **2.2.2 Lack of Efficient Learning Methods**

Early on, students lacked efficient learning methods to cope with the transition of the instructional paradigm from Chinese to English, making it difficult to build a knowledge framework and understand the connotation of knowledge. Students spent such a tremendous amount of time as to comprehend the profound knowledge, however, the exam score they obtained was not equivalent to their effort. Majority of students noted that they did not gradually master their own effective learning method until the second semester of sophomore year, and began to get accommodated to the EMI mode based on accumulation of vocabulary and professional knowledge.

N1: "Basically only if I spent a long time previewing the vocabulary before class, was I able to understand what the teacher said in class, but it was still difficult to memorize words that were too complicated."

N4: "When I saw the English slides for the first time, it was extremely difficult for me to understand. I needed to use Chinese textbooks alongside them, but I didn't know how to connect the knowledge points, so it was a bit strenuous at the beginning."

## **2.2.3 Comprehension Deviation Due to Cultural Difference**

Although the same curriculum was adopted by both foreign and Chinese teachers, biases were inevitable due to different cultural backgrounds and instructional methods, which impeded the comprehension of EMI students. Additionally, students admitted that they sometimes failed to understand the questions posed by foreign teachers in the final examination, which has imposed certain pressure on students.

N3: "The foreign teachers' way of thinking was notably different from ours, and the way of setting questions was also different, so we could hardly understand the questions on the exam paper. Since foreign teachers adopted the overseas educational methods, while we had been receiving Chinese education since childhood, this was tricky."

N6: "The foreign teachers encouraged us to communicate actively, but we tended to have a relatively superficial understanding of what they taught."

## **2.2.4 Heterogeneity of Instructional Materials**

Students asserted that the teaching materials for the Nursing EMI program lacked standardization and consistency. Specifically speaking, Chinese teachers used both Chinese and English versions of textbooks as references, while foreign teachers tended to adopt English textbooks and foreign research. At the end of semesters, students found it difficult to effectively make proper use of the materials for purposeful reviewing. In addition, without adequate relevant exercises or quizzes for knowledge consolidation, students were confused when preparing for the exams.

N13: "The teaching resources seemed to be inconsistent, some teachers referenced the Chinese textbooks, while others referred to different English materials, they did not reach a consensus, so I didn't know which book to use for review."

N3: "Without exercises to reinforce my memory, I would still be confused when faced with the exam questions."

## **2.2.5 Inconsistency Between Requirements of Different Examinations**

Students found it challenging to pursue their personal aspirations while completing the teaching tasks of EMI courses. In terms of further education and employment, students in the Nursing EMI program claimed that, influenced by multiple factors such as teaching methods, teaching content and evaluation indicators, their Grade Point Average (GPA), the scope and depth of professional knowledge, and the preparation time for exams were at a disadvantage, as compared to students in non-EMI program.

N10: "Admittedly, if I could study abroad in the future, I would adapt faster. However, with lower a GPA, it would be exceedingly difficult to apply for colleges or universities overseas. In such cases, studying in the non-EMI program for higher scores might have been better."

N5: "The knowledge involved in the Postgraduate Entrance Examination in China is different from what we learned in EMI courses."

N1: "Even if you want to apply for a cross-disciplinary master's degree, it would be simpler if you were a non-EMI student, at least you can spare part of your time to learn the major you desire for, which few EMI students are able to do."

Contradictory dissonance derived from two existing phenomena: one was the disparity between the unsatisfactory academic marks and massive endeavor students have made, and the other was the incongruity between English-medium instructional paradigm and the necessity of passing the national licensure examination in Chinese.

## **2.2.6 Psychological Pressure Caused by Educators' Excessive Expectations**

Some people were skeptical about the necessity of developing Nursing EMI program, meanwhile, their expectations of EMI students were excessive. Students believed that their abilities were likely to fall short of these expectations, which dampened their enthusiasm. N8: "Pressure also came from others' expectations. Most teachers thought EMI students' oral English should be superior, surpassing our current level. This mismatch stressed us out." N10: "It was believed that the Nursing EMI students were outstanding, mastering professional knowledge more deeply. However, compared to non-EMI students, there's still room for improvement."

## **2.3. Theme 3: Students' Suggestions on Nursing EMI**

### **2.3.1 Further Ameliorating the Curricular System**

**2.3.1.1 Clarifying the Cultivation Objectives.** The teaching goals of the Nursing EMI program should be better clarified, oriented by students' career development in the future, to train Nursing EMI students in a better planned and targeted manner. N1: "I think a clearer teaching purpose should be established before further carrying forward the development of Nursing EMI program. If eventually the trained students were to stay and take the national licensure examination in China, I think it did not maximize the utilization of teaching resources. If the purpose were to help students go abroad, the English textbooks and English examinations should be integrated into the learning process from the beginning."

**2.3.1.2 Suggestions on Restructuring Curriculum.** Given the shared problems, students have put forward some suggestions on the restructure of curriculum. Above all, class period of some major courses such as Fundamentals of Nursing and Human Structure and Function should be increased to promote the acquisition of knowledge, while medical ethics should be more subtly integrated with courses of professional basics, in this way, the importance of certain courses can be better presented. At the same time, courses such as "PMED", namely lessons concerning professional medical terms and thinking training in English, should be retained to help students with the transition from Chinese learning to an English one.

N14: "I think the quantity of lessons concerning psychology and ethics should be slightly decreased. Otherwise, Surgical and Medical Nursing will be taught too hastily due to limited class time and extensive content., making it challenging."

N12: "A course named "PMED" used unique teaching methods to deliver knowledge such as roots and affixes of English vocabulary, effectively preparing students with basic knowledge of Medicine. I think this course should be better integrated into the Nursing EMI curriculum, so that we can have a foundational grasp of the medical vocabulary."

**2.3.1.3 Modifying the Assessment Indicators.** The students reckoned that the school should formulate a set of assessment standards and separated ranking system exclusively intended for the Nursing EMI students, and the content of the examination should be more congruent with the teaching goals. Diversified assessment modalities including both summative and formative evaluation should be used to

assess students' performance, and group assignments and presentations should be applied to regularly and timely familiarize the instructors with the teaching effectiveness.

N10: "There were differences between the difficulty of Chinese exams and English ones, but in the end, students were ranked together. which exerted enormous pressure on me, because I had to make a hundred times more effort to get a scholarship and internship hospital. I think we should be ranked separately from the non-EMI students, or be assigned a weighting coefficient according to the difficulty of the exams."

N20: "I think foreign teachers were less likely to favor the summative evaluation because it was hard for them to understand our pursuit for the score-oriented learning. I believe examinations are not the only choice, and the advantages of foreign teachers can be more sufficiently exerted if formative evaluation can be more extensively adopted."

## **2.3.2 Improving Teaching Resources**

The Nursing EMI students should be provided with more teaching resources, such as foreign scientific journals, websites of teaching videos in both Chinese and English, etc., which can encourage students to learn independently.

N15: "I think more foreign books and websites of good courses overseas should be offered, just like some online learning platforms in China. We would like to know more about how to access these resources."

N16: "I think tutorial videos of some professional courses in Chinese should be added, so that we can preview the basic knowledge before class, in this way, we can have a better grasp of knowledge in EMI courses."

## **2.3.3 Promoting the Homogenization of High-Quality EMI Teaching Crews**

Students asserted that the faculty credentials failed to meet their expectation, as evidenced by the considerable variation in educators' English proficiency and the relatively abrupt integration of professional knowledge and English. The training and selection of EMI teachers are the elemental guarantee of teaching quality, so more importance should be attached to the cultivation of teachers' competence for the Nursing EMI program. Taking the systemic training standards for educators in foreign medical colleges as reference, our college should provide more opportunities for teachers to go abroad for further study, to constantly upgrade the teaching quality.

N23: "I think the construction of the Nursing EMI teaching crew should be paid sufficient attention to, teachers should be encouraged to upgrade their academic proficiency, go abroad for further study, enhance their teaching ability, and afterwards pass on the knowledge to us. It is unacceptable for highly-educated teachers to have incompetent teaching capacity."

At the same time, regular supervision and evaluation of lesson quality should be implemented. N19: "I think it would be better to train a consistent team of teachers for longer periods. This way, a harmonious relationship between students and teachers can be forged, which can further motivate students." N20: "I think teachers should also undergo regular evaluation to determine whether they are qualified to teach EMI courses."

## **2.3.4 A More International Platform Provided for Students**

As a facilitator, the college should provide students with a more international development platform, paying adequate attention to students' opportunities of educational exchange.

N11: "Now that the college has brought up students who can learn knowledge overseas, more opportunities should be provided. With college as a facilitator and booster, students are likely to reach a higher platform because they would not have such access to these opportunities individually."

N12: "As for the choices of internship hospitals, is it possible for the college to offer us hospitals which are located in Hong Kong or those engaged with Hong Kong? I'm sure that they use English more frequently than us, which may align better with our all-English teaching."

## **2.3.5 Fortifying Connection with Senior Honored Students**

Students believed that experience-sharing conferences for Nursing EMI students should be held more frequently, and referential experience should be imparted by previous graduates or senior students to the junior EMI students, to help them better adapt to the EMI mode, and simultaneously provide positive feedback to boost their proactivity and self-confidence.

N21: "I think it would be better to have senior students to guide us since they have also gone through this phase. They can definitely be more empathic, and help us solve problems."

N8: "I learned that previous Nursing EMI graduates outperformed peers in international application, Chinese postgraduate entrance exams, or clinical nursing. I'm more confident that the Nursing EMI program will grow due to alumni achievements. Thus, I hope senior students can share their experience to help us avoid detours."

## **Discussion**

### **3.1 Nursing EMI Improving Students' Comprehensive Quality but Remaining Challenging**

This study showed that EMI improved Nursing undergraduates' intercultural communication, collaboration, coping, global vision, and international competitiveness, laying the groundwork for their professional careers and further study. At the same time, students encountered numerous challenges in the process of the immersive English learning, and how to effectively deal with and tackle these problems was considerably challenging. With the trend of global health and escalating requirements of

Nursing undergraduates' professional English for various settings such as graduation, job application and clinical work, the implementation of Nursing EMI is imperative,<sup>[3],[20],[21]</sup> in spite of the increased academic burden it may bring. In the process of exploring the practice of incremental bilingual instructional paradigm in the course Introduction to Nursing, Lin Cen pointed out that, although students conceded the necessity of English teaching in professional Nursing curricula, they lacked confidence in receiving the instruction with English as the only medium,<sup>[22]</sup> which was consistent with the thinking of Vico Chiang et al.<sup>[23]</sup> Therefore, how to help students overcome drawbacks, exploit the advantages of English teaching, and cultivate students' comprehensive competence are the problems worth Nursing educators pondering.

## 3.2 Nursing EMI Remaining in the Exploratory Stage

A standardized and organized pedagogical system of Nursing EMI paradigm has not yet been built in China, and there have been certain problems that urgently needed to be tackled. According to previous research, the effectiveness of EMI program was significantly affected by the language barrier encountered by both students and lecturers.<sup>[1],[24],[25]</sup> In our study, students voiced their anticipation that more lecturers with higher English proficiency should be enrolled, which was consistent with Anja Garone et al's research.<sup>[3]</sup> In addition to the lecturers' discrepant English skills, students who used English as a ESL encountered more challenges when adapting to EMI courses,<sup>[26],[27]</sup> resulting in the less satisfactory academic performance even though more time and effort have been exerted, as compared to those using their mother language, which aligned with other research.<sup>[1],[8],[28],[29]</sup> However, throughout the students' journey to surmount hurdles, their self-motivation,<sup>[30]</sup> persistence<sup>[31]</sup> and independent learning ability have been reinforced, which has been proven by previous research. In order to address the problem of students' backward clinical English level, a university in Hong Kong launched an English support course, which has been considered a great help.<sup>[32]</sup> Similarly, an additional English training course Academic English were provided by X(referring to a specific University Medical College) to help students with the acquaintance with medical terms and grasp of clinical reasoning. Nevertheless, X(referring to a specific University Medical College) has integrated more student-centered methods such as Flipped Learning Models (FLM) and Problem-Based Learning (PBL), which enabled ESL students to learn at their own discretion and pace, mitigating the problem of inadequate interaction in EMI courses,<sup>[1],[23]</sup> as well as echoing the trendy international pedagogical philosophy of Nursing.<sup>[33],[34]</sup> Scholars in China have put forward relevant suggestions, for instance, Yang Xiulin<sup>[35]</sup> believed that more effective teaching behaviors should be applied to arouse students' interest in professional English.

## 3.3 Significant Achievements in Nursing EMI Program

Under the contemporary circumstances in China, growing numbers of universities in Mainland, China initiate programs using English as an instructional medium, among which the infiltrative and transitional bilingual mode are most common ones.<sup>[5],[24],[36]</sup> As one of the few universities which provide EMI paradigm in Mainland, China,<sup>[1],[37]</sup> X(referring to a specific University Medical College) has been

dedicated to forging a Nursing program conforming to China's national context as well as possessing the X(referring to a specific University Medical College) hallmark. The EMI teachers received accreditation from a committee composed of English-speaking medical professors and English teachers, and completed an educational reform. Since the establishment in 2013, the Nursing EMI program in X(referring to a specific University Medical College) has trained A number of graduates, with a proportion of 96% engaged in nursing-related work. In total, about 55% further studied for a master's degree, and 18% went to elite universities such as the University of Washington in the United States, the University of Sydney in Australia. Most of those chose to work were employed in affiliated hospitals of prestigious universities in China such as Zhejiang University and Sun Yat-sen University, with promising career prospects. The Nursing EMI in X(referring to a specific University Medical College) has long adhered to the concept of "international education", and been actively devoted to developing joint cultivation projects, short-term exchange projects and communication lectures by foreign specialists, as well as hosting or undertaking international seminars, which has provided teachers and students with a superb platform for international academic and teaching communication.

### *3.4 Nursing EMI Program Conforming to the Internationalization of Tertiary Education and Development Trend of Global Health*

China's Education Modernization 2035 issued by the Central Committee of the Communist Party of China and the State Council,<sup>[38]</sup> as a guideline document for China to establish an educational power in the new era, focuses on the strategic task of "creating a new scheme of education opening up to the outside world" to thoroughly improve the opening-up level of China's education and international influence. Meanwhile, due to the frequent flow of international population and the increase in the demand for foreign-related medical services, the quality and quantity of international Nursing elites are far from meeting the needs of the new situation.<sup>[28]</sup> As a hub of Nursing concepts and cultural connections between China and abroad, Nursing EMI program cultivating nursing talents with global vision and international competitiveness, and helping with the gradual integration of domestic and international Nursing, conforming to the developmental trend in the new era, is one of the important ways to actualize the international development of Nursing.<sup>[39]</sup> How to learn from the international preeminent training system, focus on the quality cultivation of talents, and develop a tertiary Nursing education model as well as system in line with China's situation remains one of the keys of the conceptual shift and system reform of Nursing education.

## **Conclusions**

In the internationalization of Nursing practice, the globalization of Nursing education is the cornerstone of the industrial development of Nursing. This study conducted in-depth interviews with undergraduates of the Nursing EMI program in X(referring to a specific University Medical College), exploring students' experience under the Nursing EMI mode, to provide a reference for further promoting the discipline construction and teaching reform, which is conducive to the internationalization of Nursing undergraduate education. However, the participants in this study were limited to current students, lacking the involvement of graduates. Future research could empirically evaluate the impact of EMI on

students' achievements in healthcare education. Additionally, quantitative research employing structured questionnaires could be undertaken to synthesize data and thoroughly assess the learning experiences of nursing students in Mainland China under EMI, thereby informing the development of effective EMI strategies.

## **Abbreviations**

EMI

English-Medium Instruction

FGD

Focus Group Discussion

HEIs

Higher Education Institutions

ESL

Second Language

GPA

Grade Point Average

FLM

Flipped Learning Models

PBL

Problem-Based Learning

## **Declarations**

The authors declare no conflict of interest.

### **Ethics approval and consent to participate**

Ethical approval was gained by the Shantou University Medical College (SUMC-2024-001)

### **Consent for publication**

All presentations of case reports have consent for publication.

### **Clinical Trial Number**

Although this study was not registered as a clinical trial, it has been approved by the Ethics Committee of Shantou University Medical College. During the research process, we obtained informed consent from all participants, ensuring they were fully aware of the study's purpose, methods, potential risks, and benefits. We are committed to protecting participants' privacy and data security, and to ensuring the transparency and compliance of the research process.

### **Availability of data and materials**



The datasets used and analyzed during the current study are available from the corresponding author on reasonable request.

### **Competing interests**

The authors declare that they have no competing interests

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### **Authors' contributions**

Qianyu Liang(co-first author): Investigation, Data Curation, Writing - Original Draft.

Jiaqi Zheng(co-first author): Investigation, Data Curation, Writing - Original Draft.

Weichen Zhang: Investigation, Data Curation.

Qingxian Liu: Supervision.

Xiaodan Lin: Supervision.

Miaolan Guo: Supervision.

Jing Su(Corresponding author): Conceptualization, Supervision, Visualization, Writing - Review & Editing.

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