



Investigation for Transcultural Self-efficacy among Medical Students in Internships

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Abstract. Objective: In the context of multicultural communication, hospitals are in urgent need of high-quality medical staff with intercultural competence to cope with the increasingly complex patient needs. This study aimed to assess the current status of transcultural self-efficacy among medical students in a medical school in Guangxi Zhuang Autonomous Region, China, and to provide a reference for the development of a targeted transcultural training program between the medical school and the teaching department of the hospital. **Methods:** The Chinese version of the Transcultural Self-Efficacy Tool (TSET) was utilized to survey 187 medical students in internship. **Results:** The transcultural self-efficacy of medical students in internship was found to be moderately low, with the mean score of the practice dimension being the lowest. The lack of a systematic intercultural curriculum, insufficient faculty intercultural knowledge, and insufficient transcultural experience of medical students in internship, along with their personal perception differences, were the main factors affecting the transcultural self-efficacy. **Conclusion:** Medical school and hospital administrators should increase the transcultural teaching content, enhance teachers' multicultural concepts, and guide medical students in internship to recognize themselves correctly and avoid complacency.

Keywords: Transcultural; Self-efficacy; Teaching methods; Medical Students; Internships

1 Introduction

China has a long history and rich culture, and medical students will interact with patients, family members, colleagues, and classmates from different countries, regions, and nationalities with different cultural backgrounds during their clinical work. They will therefore need to navigate the complex cross-cultural environment between the international and the national. Medical students with intercultural communication skills will be better able to adapt to the multicultural environment, which will help them to

better understand each other's needs and expectations and reduce communication barriers. Medical students' transcultural self-efficacy (TSE) plays an important role in this process. TSE refers to an individual's confidence and expectation of his or her ability to successfully cope and adapt in an intercultural environment. Internship medical students represent the final stage of medical professional education and learning. They are about to enter the clinical work, which requires them to learn and master the professional medical knowledge and skills. However, they also need to develop the ability to communicate and cooperate across cultures. Consequently, investigating the TSE of medical students in internship is of considerable practical value in enhancing their transcultural competence, improving their adaptability and competitiveness in multicultural healthcare environments, and enhancing the quality and efficiency of healthcare services.

In recent years, the training of Chinese medical students has made some progress in the field of transcultural education. Some medical schools have begun to prioritize the cultivation of transcultural medical talents, incorporating relevant transcultural courses into their curricula with the aim of enhancing the transcultural communication abilities of their students. Nevertheless, several challenges persist in China's transcultural medical education. First, the transcultural education system remains imperfect. The curriculum, teaching methods, and evaluation system of transcultural medical education require further refinement^[1]. Second, the shortage of teachers represents a significant obstacle. There is a dearth of medical teachers and clinical instructors with transcultural education backgrounds, which constrains the quality of medical internship training. Third, insufficient practice sessions: medical interns have limited opportunities to interact with multicultural cases in actual clinical operations, which impedes the development of transcultural communication skills in practice. Fourth, the degree of internationalization is not high: compared with developed countries, there is still a significant disparity between China's medical education in terms of international exchanges and cooperation, and the level of transcultural education requires enhancement.

The existing literature indicates a paucity of research on TSE among medical students during their internship. Some of the existing studies focus on medical students in specific cultural contexts, thereby failing to provide an overview of the situation in multicultural environments. The majority of studies on TSE have focused on in-service medical staff in hospitals^[2-4]. In 2020, studies were conducted on medical students in schools^[5-6], while there are fewer reports on medical students in internship. Furthermore, researchers have employed a greater number of quantitative studies, with the combination of qualitative and quantitative studies being particularly uncommon. This has not yet been able to meet the needs of medical schools and hospitals in the areas of teaching and research. Therefore, this study aims to investigate and analyse the TSE of medical students in internship in a multicultural environment, in order to reveal its current situation, analyse the reasons and propose targeted measures. The objective of this study is to enhance the transcultural communication abilities of medical students in internship and provide cross-cultural teaching references for relevant policymakers in the teaching departments of medical schools and hospitals.

2 Method

2.1 Sample

A cross-sectional survey was conducted on a randomly selected sample of undergraduate medical students in internship in Traditional Chinese Medicine, Acupuncture and Massage, and Nursing from a Traditional Chinese Medicine University in the Guangxi Zhuang Autonomous Region of China. Guangxi Zhuang Autonomous Region is one of five autonomous regions in China, situated between Guangdong, Hunan, Guizhou, and Yunnan, with a border to Southeast Asia and Vietnam in the southwest. Medical students in internships are exposed to a diverse range of individuals from different countries, regions, and ethnic groups, which provides a broadly representative sample. The students who participated in this study had completed a 10-month clinical medical internship, and provided informed consent for this study. The survey excluded part-time students, and students with psychological problems.

2.2 Instruments

The first part is a population questionnaire, collecting information such as gender, age, nationality, English level, religious belief, and interest in multiculturalism.

The second part is the Chinese version of the Transcultural Self-Efficacy Tool (TSET). The Chinese version of TSET was formed by Chen Jing on the basis of the English version of TSET. Through translation, back translation, cultural adaptation, and validity assessment, a total of 83 items were finally formed^[7]. It includes three subscales: Cognitive Dimension Scale (25 items), Practice Dimension Scale (28 items), and Affective Dimension Scale (30 items). The internal consistency coefficient of the Chinese version of the total scale Cronbach's alpha was 0.99, and the Cronbach's alpha of each dimension was 0.91-0.92. The content validity CVI coefficient was 0.95, with good validity^[7]. Each item of the scale is rated from 1 to 10 points (1=not confident, 10=very confident), and the Likert 10-point scoring method is used (1=not confident, 10=very confident). The scoring method is as follows: low efficacy level is a student who chooses 1 or 2 on more than 80% of the items of the scale; medium efficacy level is a response on more than 80% of the items of the scale or is not in the low or high group; high efficacy level is a student who chooses 9 or 10 on more than 80% of the items of the scale. The score of the scale is obtained by summing the answers to the items of the scale and dividing the results by the number of items of the scale^[8].

The third part involved semi-structured interviews. These interviews were conducted with 20 medical students in internships, and informed consent was obtained from each participant prior to the commencement of the interview. The duration of each interview was between 15 and 20 minutes. In-depth interview questions were developed based on the combination of research objectives, a literature review, and an expert consultation method. These questions were then revised and reviewed by experts. The entire interview was audio-recorded with the consent of the interviewee and transcribed within 24 hours of completion.

2.3 Data Collection

In order to ensure the validity of the data, the investigators selected eight medical faculty members with a master's degree or higher and more than three years of experience at the institution for uniform training. The objective of this training was to familiarize them with the questionnaire and the survey process. Prior to conducting the survey, medical students in internships were provided with a unified guideline. This was done to ensure that they completed the questionnaire successfully based on their understanding of the purpose of the survey. In order to minimize the generation of invalid questionnaires, the students were asked to complete the questionnaires independently and anonymously. The questionnaires were collected immediately after they were filled out to avoid the occurrence of similar answers or regularity. In order to increase the recovery rate of the questionnaires, a time limit was set for filling out the questionnaires, namely within 30 minutes. The whole questionnaire collection process lasted about 20 days. After collecting the questionnaires, each questionnaire was examined, and incomplete invalid questionnaires with obvious response tendencies or more than 10% missing values were excluded. A total of 199 questionnaires were issued, 199 questionnaires were collected, and incomplete questionnaires were excluded afterwards, the valid questionnaires were 187, with an effective rate of 93.97%.

2.4 Data Analysis

The study employed SPSS 22.0 software for data analysis. The questionnaires were coded and the data underwent rigorous examination to ensure its accuracy. This process was conducted separately by the researcher and another individual from the research team. The results of their respective entries were exchanged for review to guarantee the precision of the data. For count data, frequencies and percentages were employed for descriptive statistics; for normally distributed measures, means and standard deviations were utilized for descriptive statistics. Furthermore, Colaizzi's seven-step analysis was employed to summarize and refine the interview data for analysis.

3 Results

3.1 Sample characteristics

The age of the medical students in internship ranged from 20 to 23 years, with a mean age of 21.70 ± 1.30 years. The general data characteristics of the intern medical students are detailed in Table 1.

Table 1. Sample characteristics (n=187)

Characteristics	Categories	Frequency	%
Sex	Male	85	45.45
	Female	102	54.55
Ethnicity	Han ethnicity	127	67.91

	Zhuang ethnicity	51	27.27
	other ethnic minorities	9	4.82
English language proficiency	College English Level 4	91	48.66
	College English Level 6	33	17.65
Religious belief	No	63	33.69
	Yes	17	9.09
Level of interest in multicultural phenomena	No	170	90.91
	Very interested	38	20.32
	Quite interested	99	52.94
	Average	46	24.60
	Not interested	4	2.14

3.2 Transcultural Self-Efficacy Level

The average score of TSE for medical students in internship was 5.35±1.14, with a score of 5.42±1.51 on the cognitive dimension, 5.10±1.62 on the practice dimension, and 5.61±1.19 on the emotional dimension. Medical students in internship with moderate TSE were the dominant group. See Table 2.

Table 2. Perceived self-efficacy level distributions (n=187)

Sub-scale	SEL	Frequency	%
Cognitive	Low	38	20.32
	Moderate	103	55.08
	High	46	24.6
Practical	Low	40	21.4
	Moderate	113	60.41
	High	34	18.19
Affective	Low	20	10.7
	Moderate	123	65.77
	High	44	23.53

Note: SEL= self-efficacy level

4 Discussion

The study demonstrated that the TSE among medical students in internship was moderately low, with the lowest mean scores on the practice dimension and a low percentage of high performance on the practice dimension. This finding was lower than that of a study conducted at a hospital in Guizhou Province, China^[9] and a study at a university in the United States^[10]. Furthermore, the study revealed that a minority of medical students in internship exhibited higher or lower levels of TSE, indicating a lack of confidence in their ability to interact effectively with patients from diverse cultural backgrounds. This phenomenon was corroborated by qualitative findings. During the interviews, it became evident that some medical students in internship lacked an understand-

ing of patients' cultural norms, beliefs, and lifestyles, which hindered effective communication between medical staff and patients. Furthermore, some medical students in internship indicated that there were fewer courses on transcultural communication and that they lacked sufficient understanding and ability to cope with patients from different cultural backgrounds. Interviews also revealed that medical students in internship had few opportunities to interact with and learn from their peers from different cultural backgrounds, which made it difficult for them to learn from and assimilate the experiences and practices of others.

The relatively low self-efficacy of medical students in internship in cross-cultural situations may be attributed to several factors. First, the influence of cross-cultural education curricula in U.S. colleges and universities. These institutions prioritize the transfer of cross-cultural knowledge in their curricula, aiming to equip students with an understanding of the cultural characteristics and differences observed across the globe. The curriculum encompasses a range of disciplines, including the humanities, social sciences, and other fields. In contrast, the education of most medical schools in China focuses more on the cultivation of basic medicine and operational skills. The curriculum of transcultural education is insufficient. Religious concepts, moral habits, and values in a multicultural context are less involved, and there is a lack of systematic cultivation of cross-cultural competence for medical students, especially in practice. Secondly, the influence of teachers. It is evident that the majority of teachers possess a limited awareness of multiculturalism. Consequently, they may fail to recognize the impact of diverse cultural backgrounds on medical practice, and may also overlook the differences in healthcare needs and expectations between different cultural groups. This ultimately results in medical students in training having limited knowledge of multicultural concepts and theories. Third, the influence of differences in clinical placement experiences and personal perceptions of practicing medical students must be considered. The organization and duration of internships in medical schools vary from country to country and region to region. The longer the clerkship and the more departments, the richer the practical experience of the medical student intern may be. Furthermore, the presence of personal perceptions such as prejudice and discrimination, as well as a lack of cultural sensitivity and respect, may influence the medical care provided by medical students in internship to culturally diverse groups. Fourth, the influence of religious beliefs. The United States has a strong religious atmosphere, with a considerable number of individuals espousing Christianity, Islam, Buddhism, Judaism, Hinduism, and other sects. Educational institutions in the United States accord great importance to educating students about religion and culture, and students must learn to recognize, compare, and analyze different religious beliefs. In contrast, China's education law stipulates the separation of education and religion, while also encouraging the adaptation of religion to socialist society. Fifth, the impact of patients from different countries and regions. The nationality composition of patients in the United States is highly diverse, including immigrants and their descendants from all over the world. The culture of the United States is characterized by an open-ocean culture with a wide range of cultures, which is starkly different from China's inland culture dominated by Confucianism. The patients in this study were primarily ethnic minorities from various regions of Guangxi

and Han Chinese immigrants in the country, with only a small number of foreign nationals included. Sixth, the effect of different languages on the TSET scale. Since the Chinese version of the TSET survey scale has been translated, back-translated, and culturally adapted, the different translations of the scale may affect the results.

The next question is, what level of TSE is most clinically relevant? There is considerable disagreement among experts on this issue. Self-efficacy, as defined by the American psychologist Albert Bandura, is an individual's subjective judgment about himself or herself and is an individual's prediction of his or her ability and confidence in being able to perform a given task. The higher an individual's self-efficacy, the more effort he or she will expend and the greater the likelihood of success^[11]. Individuals with high self-efficacy also appear to be more comfortable learning new things. In contrast, individuals with low self-efficacy develop disengagement when faced with difficulties and use negative coping styles to deal with them. A number of studies have examined the relationship between self-efficacy and a variety of occupational outcomes, and most have found a positive relationship between self-efficacy and job performance^[12-13]. However, other scholars take a different view. Vancouver argues that self-efficacy may not have a positive effect on performance, or may even have a negative effect. Excessive self-efficacy can lead to distorted, higher levels of performance, especially when self-efficacy is exaggerated^[14]. On the other hand, Jeffreys noted in his study that health professionals with high self-efficacy may be overconfident and prone to complacency^[15]. In contrast, medical professionals with moderate self-efficacy have enough confidence and a hard-working attitude to provide better services to patients^[15]. In summary, the controversy over the optimal level of self-efficacy is currently inconclusive, and we believe that both viewpoints have their own merits. It seems most reasonable to extract the essence of both and integrate them organically. Medical students in training with high self-efficacy are more confident in their work and better able to deeply understand the patient's point of view. However, they should also be careful to avoid complacency and think from the patient's perspective.

Based on the results of this cross-sectional study, we suggest the following points to improve the TSE of medical students in internship: First, medical schools and hospitals should systematically integrate cross-cultural content into the medical specialty curriculum, taking into account the multicultural characteristics of the region. This includes not only teaching relevant knowledge in the classroom, but also providing more practice opportunities for students. In addition, more humanities courses should be offered, such as folklore, religion, linguistics, human culture and intercultural communication. Second, teachers should take the initiative to learn about multiculturalism and improve the concept of multiculturalism. Teachers can update their knowledge system by attending academic conferences at home and abroad, reading transcultural professional books and articles, and conducting transcultural research. Third, teachers should carry out the reform of teaching methods. Virtual simulation technology, bilingual teaching, online and offline blended teaching methods, film appreciation and other methods can be used to carry out experiential learning such as transcultural case sharing, doctor-patient role simulation and standardized patient simulation^[10]. Fourth, the language foundation of medical students in the internship is very important. Teachers and hospital supervisors should help them build a good language foundation in foreign languages

and dialects. Teachers can use artificial intelligence (AI) to provide personalized learning content, such as local folklore and culture, according to students' language level and learning needs. Finally, domestic medical schools should cooperate with foreign institutions. Strengthen the internationalized environment of medical institutions^[6] and provide students with mentors who have transcultural experience and educational background.

5 Conclusion

In conclusion, the TSE of medical students in internship is moderately low, with the lowest mean score of the practice dimension and a low percentage of high self-efficacy in the practice dimension. The lack of a systematic transcultural curriculum, insufficient transcultural knowledge of teachers, insufficient transcultural experience of medical students in internship, and differences in their personal perceptions are the main reasons affecting the TSE. It is recommended that TSE be enhanced by increasing the quantity and quality of transcultural teaching content, enhancing teachers' multicultural concepts, and guiding medical students to correctly recognize themselves and avoid overconfidence.

The sample size for this study was drawn from a single institution. It is possible that the findings may differ due to differences in colleges, levels of instruction, student populations, and larger, more diverse sample sizes. Future research should include replication of similar studies in a broader population. Furthermore, the assessment of medical students' TSE during their internship should incorporate aspects such as patients' perceptions and evaluations. Additionally, research should be conducted to develop a scale for the measurement of patients' satisfaction with interculturalism in order to obtain results that are closer to the real situation. For medical students in internship with high TSE, further in-depth research is needed to determine how to determine whether they have overconfidence and to develop effective interventions.

Acknowledgment

This study was funded by the scientific research program of Faculty of Chinese Medicine Science, Guangxi University of Chinese Medicine (No. 2023MS024).

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