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Influencing Factors of Cultural Competence Among Nursing Students: A Systematic Review

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***Abstract*—*This study analyzed the factors influencing cultural competence among nursing students. A systematic review of 14 articles from 11 online databases, conducted up to May 2023 was performed. Studies were included if they examined factors affecting the cultural competence of nursing students. Literature screening, data extraction, and assessment of methodological quality were carried out independently by two reviewers. The results revealed that gender, academic level, cultural diversity training, taking cultural courses, interacting with people from different ethnic backgrounds, and caring for culturally diverse patients were among the factors influencing the cultural competence of nursing students.*

***Keywords*—*Cultural competence, Nursing, Nursing students, Influencing factors.*

I. INTRODUCTION

Globalization and immigration have led to an increasing trend of cultural diversity in many countries [1]. According to the Seventh National Population Census Bulletin of 2020, China has a population of 1.4 billion people, consisting of 56 different ethnic groups. Moreover, the migrant population is approximately 376 million, and the number of foreigners with permanent residence is around 845,700 [2]. When seeking medical services, this diverse population may contribute to a more varied working environment for healthcare providers, including nurses. Patients from diverse cultural backgrounds may have different healthcare-seeking habits and nursing care needs, posing challenges for nurses in providing culturally sensitive care.

Cultural competence is regarded as the process by which healthcare providers deliver effective services to patients from diverse cultural backgrounds. This process includes awareness, cultural knowledge, cultural skills, cultural encounters, and cultural desire [3]. When providing culturally competent nursing care, nurses often encounter significant challenges such as language barriers, religious customs, and socio-cultural differences [4-5]. Enhancing nurses' cultural competence can help address these challenges and improve patient outcomes [6]. However, research suggests that there is currently a lack of cultural competency among nurses in China [7]. Therefore, it is crucial to prepare Chinese nursing students to become culturally competent nurses for the future.

In recent years, many scholars have examined the cultural competence of nursing students and the factors influencing it. However, a systematic review of this topic is lacking in the existing literature. Therefore, this study aims to conduct a systematic review of the factors influencing cultural competence among nursing students, with the goal of providing a reference for the development of targeted and effective educational and training measures.

II. METHODS

The study design is a systematic review that utilizes the vote-counting strategy to analyse factors influencing the cultural competence of nursing students.

A. Search Strategy and Selection Process

The initial literature search was conducted across 11 online databases, including PubMed, Embase, CINAHL, PsycINFO, Medline, Web of Science, ERIC, Sinomed, the Chinese National Knowledge Infrastructure (CNKI), VIP, and Wanfang Data, up to May 2023. The PICO strategy [8] was employed to guide the retrieval of relevant studies, where "P" referred to nursing students; "I" to multicultural nursing competence, transcultural nursing competence, or cultural competence; and "O" to influencing, related, or relevant factors. The search and selection process followed three steps: identification, screening, and inclusion [9]. Two independent reviewers performed the process, resolving any discrepancies through discussion until a consensus was reached. If necessary, a third reviewer was consulted to achieve agreement.

B. Inclusion and Exclusion Criteria

The inclusion criteria for this study are as follows: (1) participants must be nursing students, (2) the research topic must be closely related to cultural competence, (3) the study design must be cross-sectional, and (4) the study must be published in either Chinese or English. The exclusion criteria are: (1) duplicate data published in other sources, (2) studies with incomplete data, (3) opinion articles, case reports, conference proceedings, and data compilations, and (4) studies for which the full text is unavailable.

C. Data Extraction

We extracted all relevant information from the included studies. The following data were collected: author(s) and year of publication, study setting, sample size, variables, and the cultural competence measurement tool/instrument used. Any discrepancies were resolved through consensus among the research team.

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D. Quality of Included Articles

To assess the methodological quality of the included studies, two reviewers independently conducted a quality assessment using the Joanna Briggs Institute (JBI) critical appraisal checklist for analytical cross-sectional studies, which includes eight criteria [10]. Each criterion was scored as follows: 2 for "yes," 1 for "unclear," and 0 for "no" or "not applicable," with a maximum score of 16. Based on the total score, the studies were categorized as weak (0-5), moderate (6-11), or strong (12-16) in terms of quality [11]. In cases where disagreements arose during the appraisal process that could not be resolved through discussion, a third reviewer was consulted.

E. Data Synthesis

In this systematic review, data were synthesized using both narrative synthesis and vote-counting strategies. The factors related to cultural competence were categorized into two groups: individual factors and cultural background factors. A set of a priori rules [12] guided our synthesis: (1) A factor had to be assessed in at least four studies to be considered as influencing cultural competence; (2) a factor assessed in fewer than four studies was coded as inconsistent; (3) a factor assessed in at least four studies was coded as follows: (a) significant if ≥ 60% of the studies showed a significant impact on cultural competence, (b) not significant if ≥ 60% showed an insignificant impact, and (c) equivocal or mixed if 50% of the studies showed either a significant or insignificant impact. To address the limitations of vote counting, we supplemented this approach by considering statistical significance, sample size, and the direction and magnitude of significant effects when reported in the articles [13-14].

III. Results

A. Eligible Studies

A total of 643 articles were initially identified through the search and imported into Endnote software. After removing duplicates (n = 353), 290 articles remained. Screening the titles and abstracts led to the exclusion of an additional 174 articles. Following a full-text review of the remaining 116 articles, 14 studies met the inclusion criteria. Of these, nine were in English, and five were in Chinese (see Figure 1).

B. Study Characteristics

The basic characteristics of the 14 included studies [15-28] are presented in Table 1. The publication period ranged from 2016 to 2023. The studies were conducted in various countries, including China (n = 5; 36%), the United States (n = 2; 14%), Korea (n = 2; 14%), Austria (n = 1; 7%), Saudi Arabia (n = 1; 7%), Finland (n = 1; 7%), Philippines (n = 1; 7%), and one study from different countries (n = 1; 7%). All studies included in this review were cross-sectional studies, with sample sizes ranging from 106 [20] to 2,163 [18].

Various cultural competence assessment tools were utilized in the studies. Three studies used the Cultural Capacity Scale (CCS) [29], with one in Arabic version (CCS-A). Two studies used the Cultural Competence Assessment

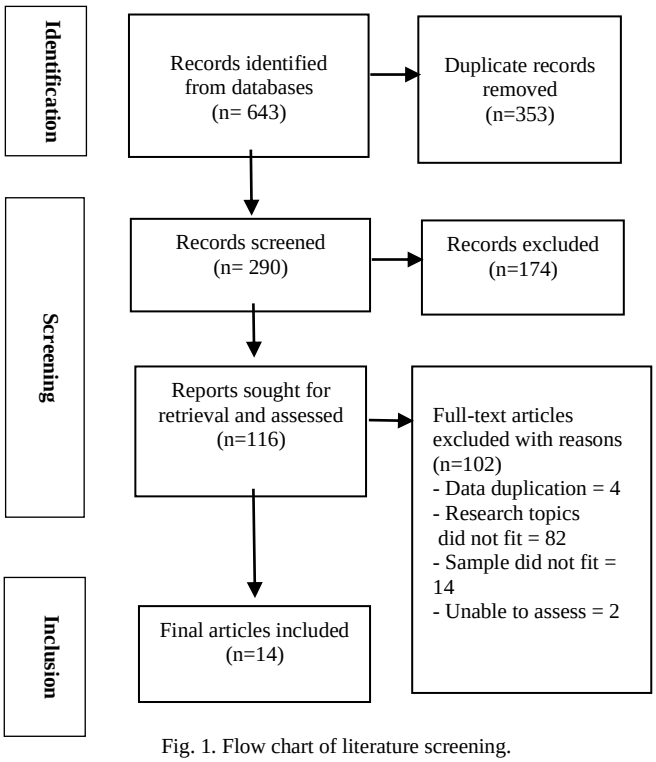

Fig. 1. Flow chart of literature screening.

scale (CCA) [30] with one in the German version (CCA-G)and another one in Chinese version. Two studies used the Cultural Competence Scale [31]. Cultural competence was also assessed through the following tools: the Inventory for Assessing the Process of Cultural Competence among Healthcare Professionals–Student Version (IAPCC-SV©) [32], the Clinical Cultural Competency Questionnaire (CCCQ) [33], the Cultural Competence Assessment Tool (CCA Tool) [16], the Cultural Competence Questionnaire for Undergraduate Nursing Students [19], the Medical Scenario Transcultural Communication Skills Questionnaire [22], the Multicultural Nursing Competency Assessment Scale [34], and the Transcultural Communication Competence Questionnaire [27].

C. Methodological quality of included studies

Of the 14 included studies, scores on the JBI critical appraisal checklist for analytical cross-sectional studies ranged from 8 to 16. Among these, 5 studies (36%) were rated as strong, meeting high methodological standards with scores between 12 and 16. Additionally, 9 studies (64%) were rated as moderate, indicating reasonably good methodological quality with scores ranging from 6 to 11.

D. Influencing factors of cultural competence

We identify influencing factors, provide details of their statistical effects on cultural competence (including the direction of effect and significance), and present our conclusions regarding their relationships with cultural competence. Among these 14 studies, six factors were assessed four or more times: gender, academic level, cultural diversity training, taking transcultural courses, interacting with people from different ethnic backgrounds, and caring for

culturally diverse patients. We categorized these factors into two groups based on their nature: individual factors and cultural background factors. Under the category of individual factors, a significant relationship between gender and cultural competence was reported in five out of seven studies (71%), with a positive direction and a magnitude (β) ranging from 0.130 to 0.63. Six out of eight studies (75%) found that academic level had a significant relationship with cultural competence, with a positive direction and a magnitude (β) ranging from 0.210 to 0.76 (see Table 2). For the cultural background factors, all four studies (100%) found that cultural diversity training and interacting with people from different ethnic backgrounds had a significant influence on cultural competence, with a positive direction and a magnitude (β) ranging from 0.099 to 0.59, and 0.075 to 0.336, respectively. Additionally, all four studies (100%) found that caring for culturally diverse patients had a significant influence on cultural competence, with a positive direction and a magnitude (β) ranging from 0.171 to 0.63. Three out of six studies (50%) also reported a significant relationship between taking cultural courses and cultural competence, with a positive direction and a magnitude (β) ranging from 0.066 to 0.419 (see Table 3).

TABLE 1. The characteristics of included studies.

No	Author (year)	Setting/Country	Sample (Sample size)	Variable	Cultural Competence		
					Instrument	Reliability	Validity
1	Cruz et al. (2016)	Three colleges of nursing in the northern Philippines/ Philippines	BSN students (n = 332)	(1) Prior diversity training (2) Living in an environment with people of diverse race/ethnicity (3) Academic level (4) Caring for culturally diverse patients (5) Caring for patients belonging to special population	CCS	α = 0.96	No report
2	Repo et al. (2016)	Four polytechnics in southern Finland/ Finland	Third- and fourth-year nursing students (n = 295)	(1) Gender (2) Native country (3) Mother language (4) Speaking foreign languages (5) Inclusion of multicultural nursing in studies (6) Exchange studies (7) Interacting with different cultures in leisure time (8) Interacting with different cultures on duty	CCATool	α = 0.80	No report
3	Cruz et al. (2017)	Nursing Department of Saudi Arabia University/Saudi Arabia	BSN students (n = 272)	(1) Gender (2) Academic level (3) Clinical exposure (4) Prior diversity training (5) Caring for culturally diverse patients (6) Caring for patients belonging to special population	CCS-A	α = 0.95	No report
4	Qian & Zhang (2017)	Nanjing University of Chinese Medicine/China	Bachelor nursing students (n = 351)	(1) Taking transcultural courses (2) Complete clinical practice (3) Taking English courses (4) Interacting with people from different ethnic backgrounds	Cultural Competence Questionnaire	α = 0.866	CVI = 0.90
5	Chen et al. (2018)	A selected school/the United States	ASN and RN-to-BSN students (n = 106)	(1) Educational level (2) Personal working experience (3) Interacting with people from different ethnic backgrounds (4) Having continuing education relevant to cultural competence (5) Receiving previous education of cultural competence	IAPCC-SV©	α = 0. 839	No report
6	Cruz et al. (2018)	Nursing schools/ nine countries (Chile, India, Iraq, Oman, Sudan, Philippines, Saudi Arabia, South Africa, Turkey)	BSN students (n = 2,163)	(1) Country of residence (2) Gender (3) Year of study (4) Attendance at cultural-related training (5) Caring for culturally diverse patients (6) Living in a multicultural environment (7) Caring for patients belonging to special population	CCS	α = 0.94	CVI = 0.98
7	Yu & Choi (2018)	Chungnam and Gyeongnam province/Korea	Nursing students (n = 200）	(1) Experience of multicultural education (2) Mutual exchange intention (3) Civic action intention (4) Acquaintance of other cultural areas	Cultural Competence Scale	α = 0.91	No report

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No	Author (year)	Setting/Country	Sample (Sample Size)	Variable	Cultural Competence		
					Instrument	Reliability	Validity
8	Huang et al. (2019)	Two medical colleges in Fujian province/China	Bachelor nursing students and associated nursing students (n = 384	(1) Gender (2) Educational level (3) Caring for culturally diverse patients (4) Taking English and transcultural courses (5) Taking transcultural courses (6) Taking English courses (7) Interacting with people from different ethnic backgrounds	Medical Scenario Transcultural Communication Skills Questionnaire	α = 0.906	CVI = 0.965
9	Tao et al. (2020)	Kunming Medical University/China	Bachelor nursing students (n = 342)	(1) Type of nursing students (2) Reasons for choosing a nursing program (3) Interest in the nursing profession (4) Complete clinical practice (5) Complete clinical practice (6) Communication skills	Multicultural Nursing Competency Assessment Scale	α = 0.871	No report
10	Wang et al. (2020)	A nursing school in Zhengzhou city/China	Bachelor nursing students (3rd year) (n = 248)	(1) Gender (2) Interacting with people from different ethnic backgrounds (3) Taking transcultural courses (4) Interest in the nursing profession (5) English proficiency level	CCA in Chinese Version	α = 0.86	No report
11	Abrams et al. (2021)	University of Central Florida (UCF) College of Nursing/the United States	Third- and fourth- year nursing students (n = 160)	(1) Spanish proficiency (2) Parent's immigration status (3) Race (4) Gender (5) School year (6) Ethnicity (7) Socioeconomic status (8) Previous service-learning experience	CCCQ	No report	No report
12	Lee & Jun (2022)	Daegu and Busan/South Korea	BSN students (n = 146)	(1) Professional nursing values (2) Compassion competence	Cultural Competence Scale	α = 0.86	No report
13	Wu et al. (2022)	Three medical universities in Hangzhou city/ China	Bachelor nursing students (n = 476)	(1) Gender (2) Educational level (3) Taking foreign language courses (4) Taking humanity courses (5) Desire to take transcultural communication courses (6) Desire to interact with foreign students	Transcultural Communication Competence Questionnaire	α = 0.949	No report
14	Osmancevic et al. (2023)	Austria	Bachelor nursing students and nurses (n = 915)	(1) Age (2) Educational level (3) Cultural diversity training experience (4) Multilingual ability (5) Migrant background (6) Self-perceived cultural competence	CCA-G	No report	No report

Abbreviations: BSN, Bachelor of Science in Nursing; ASN, associate in science in Nursing.

TABLE 2. Individual factors.

No	Factor	Reference	P value	Direction (Magnitude)
1	Gender	Repo et al. (2016)	0.399	-
		Cruz et al. (2017)	< 0.001*	+ (β = 0.186)
		Cruz et al. (2018)	0.004*	+ (β = 0.63)
		Huang et al. (2019)	0.006*	-
		Wang et al. (2020)	0.730	-
		Abrams et al. (2021)	0.004*	-
		Wu et al. (2022)	0.003*	+ (β = 0.130)
2	Academic level	Cruz et al. (2016)	0.000*	+ (β = 0.214) + (β = 0.327)
		Cruz et al. (2017)	< 0.001*	+ (β = 0.210)
		Chen et al. (2018)	> 0.05	-
		Cruz et al. (2018)	< 0.001*	+ (β = 0.76) + (β = 0.67)
		Huang et al. (2019)	< 0.001*	+ (β = 0.367)
		Abrams et al. (2021)	0.5	-
		Wu et al. (2022)	< 0.001*	+ (β = 0.320)
		Osmancevic et al. (2023)	0.045*	+ (β = 0.373)

∗ p < 0.05.

TABLE 3. Cultural background factors.

No	Factor	Reference	P value	Direction (Magnitude)
1	Cultural diversity training	Cruz et al. (2016)	0.000*	+ (β = 0.264)
		Cruz et al. (2017)	0.032*	+ (β = 0.099)
		Cruz et al. (2018)	< 0.001*	+ (β = 0.59)
		Osmancevic et al. (2023)	0.000*	+ (β = 0.449)
2	Interacting with people from different ethnic backgrounds	Qian & Zhang (2017)	< 0.001*	+ (β = 0.220)
		Chen et al. (2018)	< 0.05*	+ (r = 0.24-0.44)
		Huang et al. (2019)	< 0.001*	+ (β = 0.336)
		Wang et al. (2020)	0.000*	+ (β = 0.075)
3	Caring for culturally diverse patients	Cruz et al. (2016)	0.000*	+ (β = 0.194)
		Cruz et al. (2017)	< 0.001*	+ (β = 0.314)
		Cruz et al. (2018)	< 0.001*	+ (β = 0.63)
		Huang et al. (2019)	0.004*	+ (β = 0.171)
4	Taking cultural courses	Repo et al. (2016)	0.101	-
		Qian & Zhang (2017)	< 0.001*	+ (β = 0.419)
		Chen et al. (2018)	> 0.05	-
		Yu & Choi (2018)	< 0.001*	+ (β = 0.066)
		Huang et al. (2019)	0.746	-
		Wang et al. (2020)	0.014*	+ (β = 0.082)

IV. Dission

This research carried out a systematic review to determine the elements affecting cultural competence in nursing students. A total of six factors affecting cultural competence were identified, which were categorized into two groups based on their nature: individual factors and cultural background factors. Individual factors include gender and academic level, while cultural background factors encompass cultural diversity training, taking cultural courses, interacting with people from different ethnic backgrounds, and caring for culturally diverse patients.

A. Individual Factors

The category of individual factors includes gender and academic level. Out of seven studies, five found a significant relationship between gender and cultural competence [17-18, 22, 25, 27]. However, the findings regarding the impact of gender varied across studies. Two studies suggested that males had higher cultural competence than females [17-18]. This finding was attributed to the conservative nature of certain countries, such as Saudi Arabia, where significant restrictions on the mobility of women result in fewer cross-cultural interactions for females, which in turn leads to lower cultural competence compared to males. On the other hand, three studies suggested that females had higher cultural competence than males [22, 25, 27], possibly due to the perception that females are more emotionally sensitive, detail-oriented, and caring [22, 27]. It should be noted that the impact of gender on cultural competence among nursing students is also influenced by other factors, such as the level of conservatism in the country and individual personality traits.

Additionally, the gender distribution in nursing education, with a higher proportion of female students and fewer male students, may contribute to stereotypical impressions that affect the assertiveness of males, potentially influencing their cultural competence compared to females [22, 27]. Given these complexities, nursing educators are encouraged to conduct targeted cultural competence training tailored to the local cultural context to enhance the cultural competence of students of different genders. This approach will help nursing students develop the necessary skills to provide culturally sensitive, patient-centered care in diverse healthcare settings. Six studies found a significant relationship between academic level and cultural competence [15, 17-18, 22, 27-28]. Students with higher academic levels, having completed more nursing courses and gained broader clinical and community experiences, tend to have more opportunities for cultural exposure [15]. Additionally, nursing students with higher academic levels often have higher expectations and requirements for training goals and professional knowledge, leading to higher levels of cultural competence [22, 27].

B. Cultural Background Factors

Four studies found that cultural diversity training had a significant and positive influence on cultural competence [15, 17-18, 28]. Additionally, three out of six studies reported a significant and positive relationship between taking cultural courses and cultural competence [19, 21, 24]. Raising cultural awareness and skills through education and training is essential for developing cultural competence [35]. Cultural courses help nursing students systematically understand multicultural phenomena in nursing, respect and understand patients' values, customs, and religious beliefs, acquire cross-cultural communication and nursing skills, and avoid cultural conflicts [22, 24]. Previous studies support the notion that prior cultural diversity training influences the level of cultural competence. The more extensive the training, the higher the level of cultural competence among nurses [36-37]. To achieve optimal health outcomes, cultural diversity training and courses should be provided to nursing students before they engage directly with people in diverse healthcare settings.

Furthermore, four studies revealed that interacting with individuals from diverse ethnic backgrounds had a significant and positive impact on cultural competence [19-20, 22, 24], while four studies showed that caring for culturally diverse patients also had a significant and positive effect on cultural competence [15, 17-18, 22]. Exposure to different cultures through various means can enhance nursing students' sensitivity and tolerance toward cultural diversity, enabling them to effectively address cultural differences and overcome communication barriers arising from these differences [38].

Direct interaction with patients from diverse cultural backgrounds can refine or reshape one's existing beliefs and values regarding cultural diversity, helping to prevent cultural bias. Rich exposure to different cultures not only fosters nursing students' interest in cultural learning but also deepens their understanding of both their own culture and others. The experience of caring for patients from culturally diverse backgrounds significantly contributes to the enhancement of nursing students' cultural competence [15, 17-18, 22, 25]. Providing nursing students with opportunities to care for patients from diverse cultures enables them to better understand cultural nursing and improve their cultural competence in clinical practice.

V. Implications Of Nursing Education

As nursing students are the future workforce, nursing educators should place significant emphasis on cultivating their cultural competence to enhance their ability to adapt in their future careers [39]. To ensure that students are exposed to cultural sensitivity and understanding from the beginning of their education, nursing educators should integrate cultural competence content throughout the nursing curriculum [40]. This integration can be tailored to account for differences in nursing students' gender and academic levels, incorporating cultural competence courses, encouraging students to engage in activities that promote cultural awareness, and facilitating interactions with people from diverse cultural backgrounds. By adopting such approaches, nursing students will develop a deeper appreciation for diverse cultures, which is essential for providing patient-centered care and meeting the needs of diverse patient populations. The cultivation of cultural competence in nursing education will ultimately lead to improved healthcare outcomes and enhanced patient experiences.

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Moreover, experiencing diverse patient groups provides valuable insights into cultural differences [41]. Therefore, nursing educators should actively encourage nursing students to participate in clinical practice across various healthcare settings, facilitate their interactions with patients from diverse cultural backgrounds, and provide opportunities for them to care for patients from different cultural contexts. This exposure during clinical practice will equip students with a comprehensive understanding of culturally competent care and help them acquire essential knowledge in cultural nursing. Moving forward, future research should focus on refining teaching strategies to enhance nursing students' cultural competence, aligning these strategies with the identified influencing factors. By advancing these educational approaches, nursing students will be better equipped to adapt to diverse healthcare environments and deliver compassionate, culturally sensitive care.

VI. Conclusion

This study concludes that the factors influencing nursing students' cultural competence include gender, academic level, cultural diversity training, taking cultural courses, interacting with people from diverse ethnic backgrounds, and caring for patients from culturally diverse backgrounds. Future research should focus on developing scientifically effective cultural competence education programs based on these factors. Additionally, conducting large-scale teaching experiments will provide valuable insights into cultivating nursing students' cultural competence. The limitations of this study include the reliance on cross-sectional surveys, which lack the depth of statistical analyses from other research designs. Future studies should consider a broader range of research methodologies for a more comprehensive evaluation. Furthermore, there is inconsistency in the cultural competence assessment tools used for nursing students, making it challenging to evaluate cultural competence using standardized dimensions. This study also only included Chinese and English literature and did not consider non-Chinese, non-English literature or gray literature.

References

[1] S. Alizadeh and M. Chavan, "Cultural competence dimensions and outcomes: A systematic review of the literature," *Health & Social Care in the Community*, vol. 24, issue 6, pp. e117–e130, 2016.

[2] N. Jizhe, "Main data of the seventh national population census," *National Bureau Statistics of China*, 2021. Available: https://www.stats.gov.cn/english/PressRelease/202105/t20210510_1817185.html.

[3] J. Campinha-Bacote, "The process of cultural competence in the delivery of healthcare services: A model of care," *Journal of Transcultural Nursing*, vol. 13, issue 3, pp. 181–184, 2002.

[4] D. S. Leung and B. H. Ku, "Health-seeking, intercultural health communication, and health outcomes: An intersectional study of ethnic minorities' lived experiences," *Journal of Advanced Nursing*, vol. 79, issue 5, pp. 1856–1867, 2023.

[5] L. Wang and Y. J. Wang, "A survey on the current situation of multicultural nursing by nurses in foreign-related medical institutions (in Chinese)," *Journal of Nursing (China)*, vol. 20, pp. 41-44, 2015.

[6] L. Nair and O. A. Adetayo, "Cultural competence and ethnic diversity in healthcare," *Plastic and Reconstructive Surgery-Global Open*, vol. 7, issue 5, e2219, 2019. Available: doi:10.1097/GOX.0000000000002219.

[7] D. Cai, W. He and D. Klug, "Cultural competence among nurses and its influencing factors: A cross-sectional study," *Nursing & Health Sciences*, vol. 23, issue 2, pp. 411–418, 2021.

[8] K Flemming, "Critical appraisal. 2. Searchable questions," *NT Learning Curve*, vol. 3, issue 2, pp. 6-7, 1999.

[9] PRISMA, "PRISMA flow diagram," 2020. Available: https://www.prisma-statement.org/prisma-2020-flow-diagram.

[10] S. Moola, Z. Munn, C. Tufanaru, E. Aromataris, K. Sears, R. Sfetcu, M. Currie, R. Qureshi, P. Mattis, K. Lisy, and P. F. Mu, "Systematic reviews of etiology and risk," *JBI Manual for Evidence Synthesis*, 2020. Available: https://doi.org/10.46658/JBIMES-24-06.

[11] F. M. F. Wong, A. C. Y. Tang, and W. L. S. Cheng, "Factors associated with self-directed learning among undergraduate nursing students: A systematic review," *Nurse Education Today*, vol. 104, 104998, 2021. Available: https://doi.org/10.1016/j.nedt.2021.104998.

[12] J. E. Squires, M. Hoben, S. Linklater, H. L. Carleton, N. Graham, and C. A. Estabrooks, "Job satisfaction among care aides in residential long-term care: A systematic review of contributing factors, both individual and Organizational," *Nursing Research and Practice*, vol. 2015, 157924, 2015. Available: http://dx.doi.org/10.1155/2015/157924.

[13] J. Grimshaw, L. M. McAuley, L. A. Bero, R. Grilli, A. D. Oxman, C. Ramsay, L. Vale, and M. Zwarenstein, "Systematic reviews of the effectiveness of quality improvement strategies and programs," *Quality & Safety in Health Care*, vol. 12, issue 4, pp. 298–303, 2003.

[14] J. E. Squires, C. A. Estabrooks, P. Gustavsson, and L. Wallin, "Individual determinants of research utilization by nurse: A systematic review update," *Implementation Science*, vol. 6, issue 1, 2011.

[15] J. P. Cruz, J. C. Estacio, C. E. Bagtang, and P. C. Colet, "Predictors of cultural competence among nursing students in the Philippines: A cross-sectional study," *Nurse Education Today*, vol. 46, pp. 121–126, 2016.

[16] H. Repo, T. Vahlberg, L. Salminen, I. Papadopoulos, and H. Leino-Kilpi, "The cultural competence of graduating nursing students," *Journal of Transcultural Nursing*, vol. 28, issue 1, pp. 98–107, 2017.

[17] J. P. Cruz, N. Alquwez, C. P. Cruz, R. F. D. Felicilda-Reynaldo, L. M. Vitorino, and S. M. S. Islam, "Cultural competence among nursing students in Saudi Arabia: A cross-sectional study," *International Nursing Review*, vol. 64, issue 2, pp. 215–223, 2017.

[18] J. P. Cruz, A. N. Aguinaldo, J. C. Estacio, A. Alotaibi, S. Arguvanli, A. R. R. Cayaban, H. S. John Cecily, F. A. Machuca Contreras, A. Hussein, E. S. Idemudia, S. A. M. Mohamed, and J. Sebaeng, "A multicountry perspective on cultural competence among baccalaureate nursing students," *Journal of Nursing Scholarship*, vol. 50, issue 1, pp. 92-101, 2018.

[19] J. Qian and H. Zhang, "Analysis on the status quo and influencing factors of multicultural competence of 315 undergraduate nursing students (in Chinese)," *Journal of Nursing (China)*, vol. 24, issue 5, pp. 37-40, 2017.

[20] H. C. Chen, F. Jensen, G. Measom, S. Bennett, N. D. Nichols, L. Wiggins, and A. Anderton, "Factors influencing the development of cultural competence in undergraduate nursing students," *Journal of Nursing Educatio*n, vol. 57, issue 1, pp. 40–43, 2018.

[21] M. Yu, and J. Choi, "A study on factors affecting nursing student's cultural competency," *Indian Journal of Public Health Research and Development*, vol. 9, issue 9, pp. 433-438, 2018.

[22] Y. Huang, Y. Xie, J. Zhong, and B. Ye, "Analysis on the status quo and influencing factors of transcultural nursing competence of 384 nursing students (in Chinese)," *Journal of Nursing (China)*, vol. 26, issue 1, pp. 45-49, 2019.

[23] H. Tao, T. Zhou, X. Zhan, Q. Duan, Y. Dong, and K. Xu, "Investigation on multicultural nursing competence of nursing undergraduates (in Chinese)," *Journal of Higher Education (China)*, vol. 18, pp. 54-56, 2020.

[24] R. Wang, Q. Chen, and M. Xu, "Current situation and influencing factors of nursing undergraduates' cultural nursing competence (in Chinese)," *Chinese General Practice Nursing (China)*, vol. 18, issue 32, pp. 4510-4513, 2020.

[25] M. P. Abrams, S. Chalise, H. Peralta, and J. Simms-Cendan, "Social, demographic, Spanish language, and experiential factors influencing nursing students' cultural competence," *Journal of Nursing Education*, vol. 60, issue 1, pp. 29–33, 2021.

[26] J. Lee and W. H. Jun, "Effect of compassion competence on cultural competence in student nurses: Mediating effect of professional nursing values," *Journal of Professional Nursing*, vol. 41, pp. 134–139, 2022.

[27] T. Wu, L. Lou, H. Zhou, J. Lin, and M. Cao, "The current status and influencing factors of intercultural communication competence of

nursing students (in Chinese)," *Chinese Journal of Nursing Education (China)*, vol. 19, issue 7, pp. 626-630, 2022.
[28] S. Osmancevic, F. Großschädl, and C. Lohrmann, "Cultural competence among nursing students and nurses working in acute care settings: A cross-sectional study," *BMC Health Services Research*, vol. 23, issue 1, 105, 2023.
[29] S. J. Perng and R. Watson, "Construct validation of the nurse cultural competence scale: A hierarchy of abilities," *Journal of Clinical Nursing*, vol. 21, issue 11-12, pp. 1678–1684, 2012.
[30] S. M. Schim, A. Z. Doorenbos, J. Miller, and R. Benkert, "Development of a cultural competence assessment instrument," *Journal of Nursing Measurement*, vol. 11, issue 1, pp. 29–40, 2003.
[31] S. Y. Han and H. I. Cho Chung, "Development of a cultural competence scale for nursing students," *Journal of Korean Academy of Nursing*, vol. 45, issue 5, pp. 684–693, 2015.
[32] J. Campinha-Bacote, "The process of cultural competence in the delivery of healthcare services: A model of care," *Journal of Transcultural Nursing*, vol. 13, issue 3, pp. 181-184, 2002.
[33] M. Echeverri, C. Brookover, and K. Kennedy, "Nine constructs of cultural competence for curriculum development," *American Journal of Pharmaceutical Education*, vol. 74, issue 10, article 181, 2010.
[34] E. Xu, "Preliminary development of multicultural nursing competence scale for undergraduate nurses," M.S. thesis, School of Nursing, University of South China, Hengyang, Hunan, China, 2016.
[35] M. R. Jeffreys, *Teaching Cultural Competence in Nursing and Health Care: Inquiry, Action, and Innovation*, 3rd ed. New York, USA: Springer Publishing Company, 2015.
[36] H. L. Lin, J. L. Guo, H. J. Chen, L. L. Liao, and L. C. Chang, "Cultural competence among pre-graduate nursing students, new graduate nurses, nurse mentors, and registered nurses: A comparative descriptive study," *Nurse Education Today*, vol. 97, 104701, 2020. Available: https://doi.org/10.1016/j.nedt.2020.104701.
[37] A. Z. Doorenbos, A. M. Morris, E. A. Haozous, H. Harris, and D. R. Flum, "Assessing cultural competence among oncology surgeons," *Journal of Oncology Practice*, vol. 12, issue 1, pp. 61–62, 2016.
[38] M. Leininger, "Future directions in transcultural nursing in the 21st century," *International Nursing Review*, vol. 44, issue 1, pp. 19–23, 1997.
[39] R. W. Gallagher and J. R. Polanin, "A meta-analysis of educational interventions designed to enhance cultural competence in professional nurses and nursing students," *Nurse Education Today*, vol. 35, issue 2, pp. 333–340, 2015.
[40] N. G. Cuellar, A. M. Brennan, K. Vito, and M. L. de Leon Siantz, "Cultural competence in the undergraduate nursing curriculum," *Journal of Professional Nursing*, vol. 24, issue 3, pp. 143–149, 2008.
[41] D. E. Stubbe, "Practicing cultural competence and cultural humility in the care of diverse patients," *Focus (American Psychiatric Publishing)*, vol. 18, issue 1, pp. 49–51, 2020.