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RESEARCH ARTICLE

The Effect of Institutional Support on the Cultural Intelligence of Nursing Students

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Abstract:

Background:

Cultural intelligence is important for studying, working, and living in multicultural societies. Previous studies have indicated that training and learning support are important for improving students' cultural intelligence. The purpose of this study was to investigate the effect of institutional support on cultural intelligence.

Methods:

933 nursing students in three countries, among Malaysia, the Philippines, and Thailand, answered a rating scale questionnaire. A structural equation model was used to examine the effect of institutional support on cultural intelligence.

Results:

Institutional support had a statistically significant effect on cultural intelligence, with an effect size of 0.57.

Conclusion:

For promoting cultural intelligence divided into three aspects, the first concerns the implementation of multicultural experiences in curricula; the second involves extra-curricular activities for being applied in multicultural situations; and the last regards encouraging teachers to realize the importance of culture and integrating cultural content in their teaching and in the students' learning.

Keywords: Cultural intelligence, Nursing students, Institutional support, Multicultural experiences, Nursing education, Cultural skill.

1. INTRODUCTION

Digital globalization in the 21st century, characterized by global flows of technology, has impacted working and learning across borders. Therefore, it is a challenge to develop skill development systems that enable people to live and work effectively in cross-cultural contexts. Apart from a person's intelligence quotient, which is associated with knowledge, logical thinking skills, and problem-solving abilities [1], and emotional intelligence, which refers to the ability to manage one's emotions for appropriate expression and socializing [2], importance needs to be placed on cultural intelligence, which involves cultural knowledge, the capability to perform effectively in culturally diverse settings, and awareness and acceptance of living together in a multicultural society [3].

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Promoting cultural intelligence for professional purposes is as important as developing cultural skills in parallel with academic competence in order to make people have the ability to efficiently apply their professional knowledge to work situations, to achieve their professional goals, and to appropriately adapt to living in a multicultural society. According to a literature review, many previous studies, for example on Singapore [4], Malaysia [5], the Philippines [6], Korea [7], Japan [8], and Thailand [9], have indicated that cultural intelligence has an influence on work performance and educational achievement. In the health service sector, the differences in cultural competence are considered an important issue. The Purnell model and its organizing framework suggest that cultural competence is important for nursing students because they need to understand the values, beliefs, attitudes, and lifestyles of patients from different backgrounds and cultures [10]. This is in line with the findings of studies conducted by Campinha-Bacote [11] and Balcazar, Suarez-

Balcazar, and Taylor-Ritzler [12], stating that cultural skills are personal characteristics that enable health professionals to appropriately provide health services to patients according to their culture, which helps to improve service efficiency based on diverse cultural needs.

Based on the current situation regarding multicultural societies, it is essential for the schools of health science to recognize and understand the importance of cultural differences. Healthcare facilities or hospitals should recognize the importance of developing standards in order to prepare for situational changes and to adjust organizational visions according to multicultural changes. Many studies on cultural intelligence have indicated that organizational employees have a medium level of cultural intelligence. Ruangbowongate, Nieamsup, and Suthisai [13] found that the employees in a private hospital in Bangkok had a cultural intelligence mean score of 3.59. This is consistent with Aticomsuwan [14], who stated that the social sciences and science students in a western Thai university had a medium level of cultural intelligence, with a mean score of 3.47. In addition, Phanphairoj, Piromsombat, and Ruengtrakul also indicated that the cultural intelligence of Thai nursing students was at a medium level, with a mean score of 3.40 [15].

Therefore, preparing nursing professionals to keep up with changing environments and develop cultural skills for caring for people in a multicultural society is very important for the health service sector. The present research studied the cultural intelligence of nursing students in three countries: the Philippines, Malaysia, and Thailand. The Philippines is a leading ASEAN country that focuses on preparing nurses to work in international settings and to develop nurses' ability to communicate in English, which is a universal language, and to promote nurses' ability to care for and understand patients from different cultures [16]. Malaysia, on the other hand, has established a medical tourism policy of providing medical services to foreign patients and has also placed importance on developing medical professionals to have cultural skills for working in both domestic and international contexts [17, 18]. Thailand has determined a national strategy on public healthcare and has set the goal of becoming ASEAN's medical hub. Thus, this study aimed to analyze the effect of institutional support regarding the importance of cultural differences on the cultural intelligence of nursing students in these three countries. The obtained results can be used to create guidelines for the development of the cultural intelligence of nursing students in the future.

2. LITERATURE REVIEW

2.1. Institutional Support Regarding The Importance of Cultural Differences

Helping people to become aware of the importance of cultural differences requires support and encouragement at the educational institution level. It is important to provide knowledge and understanding of cultural differences during the teaching and learning process of each professional course so that students can apply their cultural skills and knowledge to their actual work situations. This approach is considered to develop students' cultural intelligence for professional

purposes [12]. Reese and Beckwith [19] suggested that the cultural competence of health organizations has an effect on the cultural competence of health service personnel. Once health organizations pay attention to cultural competence, health service personnel will also recognize the importance of cultural differences.

The concept of promoting cultural intelligence along with nursing education has been used in many countries, such as Canada, Australia, England, and Korea [20]. Therefore, the preparation of nursing professionals should begin with classroom learning at the curriculum level by integrating cultural intelligence knowledge into the nursing education curriculum [21]. This is in line with a study determining a nursing curriculum for working in culturally diverse areas [22], providing a policy recommendation according to which relevant educational institutions and organizations need to participate in promoting cultural intelligence. It is recognized that cultural intelligence is one of the important characteristics of nursing students, which requires support and attention from educational institutions [23]. In the present study, institutional support regarding the importance of cultural differences was investigated based on the following three components.

Component 1: Curriculum refers to a curriculum that integrates cultural intelligence activities into regular theoretical and practical courses, beginning with course objectives and extending to instructional media and evaluation at the end of each course.

Component 2: Extra-curricular activities refer to activities or projects that aim to promote cultural intelligence in addition to regular lessons, activities that are not included in the formal curriculum, and a classroom environment that is conducive to cultural learning.

Component 3: Lecturer refers to a full-time faculty member that places importance on cultural intelligence and motivates students to recognize the importance of applying cultural intelligence to daily life and work.

2.2. Cultural Intelligence

Culture is the way of life of people, including their learning experiences and behaviors, which are transferred differently in each society. Culture can change to meet the needs of people in each society and is based on changing contexts [24]. In the present situation of globalization, culture is not restricted to any specific place but expands its scope and linkage to various areas, which has resulted in the emergence of cultural diversity in society and the workplace, as well as racial and ethnic diversity in educational institutions. Therefore, learning the culture of others is a useful way to increase awareness of various beliefs, enhance empathy for others, and reduce personal bias that stems from cultural differences. In addition, cultural diversity makes society a better place to live because the diversity of cultures, languages, lifestyles, and knowledge helps to create opportunities to learn from differences [25].

According to a nursing study, it was found that registered nurses' ability to understand the values, beliefs, and behaviors of patients from different cultures has an impact on work

performance, helps to reduce anxiety when faced with cultural differences, and enables full utilization of knowledge [26]. In the present research, cultural intelligence (CQ) refers to the ability to manage knowledge, emotions, and behaviors related to cultural diversity, composed of three components [15]. The details of each component are as follows.

Component 1: Cognitive CQ refers to an individual's knowledge of and learning about cultural diversity. Cognitive CQ is comprised of two components: 1) cultural knowledge and 2) cultural learning. Cultural knowledge refers to an individual's basic knowledge about other cultures' ways of life, values, beliefs, and social characteristics. Cultural learning refers to how an individual learns and acquires knowledge about cultural diversity and how he or she uses the acquired information to analyze and evaluate his or her own cultural knowledge.

Component 2: Affective CQ refers to an individual's positive feelings toward cultural diversity. The three components of affective CQ include 1) cultural agreeableness, 2) cultural awareness, and 3) cultural motivation. Cultural agreeableness refers to an individual's acceptance and appreciation of cultures and unprejudiced openness toward the opinions embodied in other cultures. Cultural awareness refers to an individual's awareness of actions that may affect people from other cultures and the ability to keep one's emotions under control in order to avoid conflict situations. Cultural motivation refers to an individual's desire to develop cultural knowledge on a continual basis.

Component 3: Behavioral CQ refers to an individual's appropriate expression in a situation related to cultural diversity. The two components of behavioral CQ are 1) cultural communication and 2) cultural encounters. Cultural communication refers to an individual's language skills in terms of communicating his or her needs with people from diverse cultures according to personal objectives and the ability to explain solid reasons for solving problems arising from cultural differences without causing interpersonal conflicts. Cultural encounters refer to an individual's ability to analyze and distinguish people from different cultures and to evaluate situations that may lead to conflicts in order to prevent problems caused by differences in beliefs and cultures.

2.3. Research Framework

Based on the review of related literature, the factors affecting cultural intelligence consist of internal factors, such as personal adaptation and language ability, and external factors, such as cultural or multicultural experiences and interactions with people from different cultures [26 - 28]. Cultural intelligence can be developed and promoted through the enhancement of learning from past experiences, the development of verbal and non-verbal communication skills based on cultural appropriateness, the application of appropriate communication skills in professional settings, and reinforcement of teachers' awareness of cultural differences for lifelong learning [29, 30]. The development of cultural intelligence through learning from lecturing, literature reading, knowledge sharing, and multicultural trips to different regions or countries that connect classroom learning with life outside the class can continuously enhance the cultural intelligence of students based on the time frame of each course [31, 32]. Therefore, the research framework of this study was composed of two main variables: cultural intelligence and institutional support regarding the importance of cultural differences. The details are shown in Fig. (**1**).

2.4. Research Hypothesis

Institutional support regarding the importance of cultural differences has an effect on cultural intelligence by using countries as a moderator of the effect.

3. MATERIALS AND METHODS

3.1. Sample and Data Collection

The target population of this study was senior nursing students in the Philippines, Malaysia, and Thailand. This group of nursing students was selected because they had already completed 80% of their undergraduate nursing program and could provide overall information about their learning experiences in the educational institution. In this study, the data were collected from 933 senior nursing students, consisting of 302 Filipino students, 400 Thai students, and 213 Malaysian students.
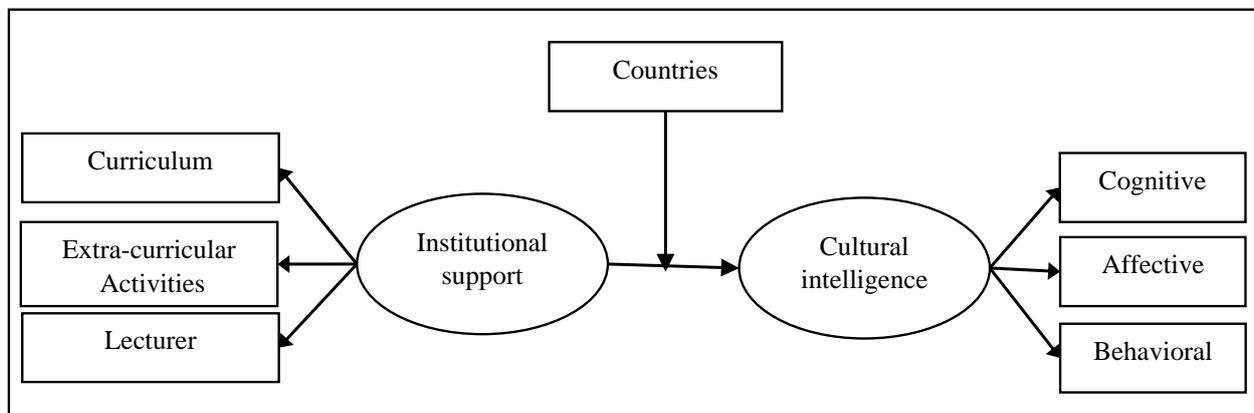

Fig. (1). Research framework.

Table 1. Frequency and percentage of participants by type of institution.

Separated by	Country	Philippines		Thailand		Malaysia		Total	
		n	%	n	%	n	%	n	%
Type of Institution	Public	150	49.67	250	62.50	122	52.81	522	55.95
	Private	152	50.33	150	37.50	109	47.19	411	44.05
	Total	302	100.00	400	100.00	231	100.00	933	100.00

Table 2. Frequency and percentage of participants by region of each country.

Region	Philippines		Region	Thailand		Region	Malaysia	
	n	%		*n*	%		*n*	%
North	102	33.77	**North**	100	25.00			
Central	100	33.11	**Central**	100	25.00	**West**	231	100.00
South	100	33.11	**South**	100	25.00			
			Northeast	100	25.00			
Total	**302**	**100.00**	**Total**	**400**	**100.00**	**Total**	**231**	**100.00**

The number of participants classified by type of university was similar in proportion; 522 were from public universities (57.05%), and the other 411 were from private universities (44.05%). The number of participants classified by type of university in each of the three countries was also similar. The participants from the Philippines were composed of 150 public university students (49.67%) and 152 private university students (50.33%). As for Thailand, 250 of the participants were from public universities (62.50%), while 150 were from private universities (37.50%). The participants from Malaysia consisted of 122 public university students (52.81%) and 109 private university students (47.19%). The details are shown in Table **1**.

When classifying the participants according to the region of each country, it was found that the proportion of participants in the three regions of the Philippines was similar. There were 202 participants from the northern region (33.7%), while the central and southern regions had an equal number of 200 participants (33.11%). In Thailand, the total number of participants from the four regions was equal to 100 (25%). As there was only one university that provided a regular nursing program in Malaysia, the total number of 231 nursing students in the western region accounted for 100% of the participants. The details are presented in Table **2**.

3.2. Research Instrument

The research instrument was a questionnaire composed of two main parts: 1) a cultural intelligence scale with a series of 30 questions and 2) an institutional support scale with a series of 15 questions. A 5-point Likert scale with five possible responses ranging from "strongly disagree" (1 point) to "strongly agree" (5 points) was adapted in order to create the questionnaire. Cultural intelligence was measured based on three components: cognitive CQ (11 questions), affective CQ (11 questions), and behavioral CQ (8 questions). Institutional support was examined by taking account of three components: curriculum (seven questions), extra-curricular activities (four questions), and lecturer (four questions).

In order to create a two-language questionnaire to collect the data from the Philippines and Malaysia, the questionnaire was translated from Thai into English using the forward and backward translation method. The quality of the instrument was examined using the reliability analysis technique according to the studied countries. The developed two-language questionnaire was tried out with senior undergraduate students in Thailand and the Philippines who were not the participants of this research to confirm internal consistency using Cronbach's alpha coefficient method. The results showed that the reliability values of the cultural intelligence scale for the Thai, Filipino, and Malaysian versions were 0.92, 0.90, and 0.92, and the institutional support scale for the Thai, Filipino, and Malaysian versions was 0.87 to 092, respectively. Therefore, the instrument was highly reliable and suitable for this study for the three countries.

3.4. Data Analysis

Basic data analysis was applied in order to analyze the data of the students in each country. The basic statistics used were percentage, mean, and standard deviation. ANOVA analysis was used to compare the institutional support among the three countries, and a structural equation model was also used to examine the effect of institutional support on cultural intelligence using countries as a moderator.

4. RESULTS

4.1. Descriptive Statistics

In the Philippines, most of the participants were Christians (n=192, 63.58%), followed by Muslims (n=75, 24.83%), and people of other religions (n=31, 10.26%). In Thailand, the majority of the participants were Buddhists (n=376, 94.24%), followed by Muslims (n=17, 4.26%) and Christians (n=6, 1.50%). As for Malaysia, most of the participants were Muslims (n=194, 483.98%), Buddhists (n=11, 4.76%), and people of other religions (n=14, 6.06%).

The analysis of the variables showed that the overall mean score and standard deviation of cultural intelligence were 3.57 and 0.49, respectively (Philippines: *M*=3.80, *SD*=0.45; Thailand: *M*=3.40, *SD*=0.45; Malaysia: *M*=3.58, *SD*=0.48). The overall mean score and standard deviation of institutional

support regarding the importance of cultural differences were 3.65 and 0.58, respectively (Philippines: *M*=3.81, *SD*=0.63; Thailand: *M*=3.57, *SD*=0.53; Malaysia: *M*=3.58, *SD*=0.56). Regarding the analysis of the cultural intelligence components, the results showed that, in the Philippines, the affective CQ had the highest mean score among the three components. It was also found that the affective CQ in the Philippines had the highest mean score among the three countries. The details are shown in Table **3**.

4.2. Comparison of Each Country

A comparison of the cultural intelligence among the three countries was carried out using ANOVA analysis. The results showed that the cultural intelligence mean scores for the three countries were different at a statistical significance level of 0.05 ($F = 66.01$, $p < .001$). When investigating the variance between groups using Levene's test, the results showed that there was no statistically significant difference at the level of .05. Then a *post hoc* test was performed using the Bonferroni method. The results indicated that the cultural intelligence mean score for the Philippines was higher than that for Thailand and Malaysia at a statistical significance level of .05. The details are shown in Table **4** and Fig. (**2**).

Table 3. Descriptive statistics of the variables.

Variable / Indicator	Country							
	Philippines		Thailand		Malaysia		Total	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Cultural intelligence (CQ)	3.80	0.45	3.40	0.45	3.58	0.48	3.57	0.49
Knowledge CQ	3.51	0.56	3.26	0.54	3.33	0.60	3.36	0.57
Affective CQ	4.31	0.45	3.89	0.57	3.98	0.50	4.05	0.55
Behavioral CQ	3.59	0.66	3.05	0.57	3.42	0.66	3.31	0.67
Institutional support	3.81	0.63	3.57	0.53	3.58	0.56	3.65	0.58
Curriculum	3.86	0.67	3.68	0.62	3.62	0.59	3.72	0.63
Extra-curricular Activities	3.67	0.81	3.54	0.63	3.53	0.70	3.58	0.71
Lecturer	3.92	0.72	3.50	0.56	3.59	0.72	3.66	0.68

Table 4. Comparison of cultural intelligence among the three countries.

Variables		Test of Homogeneity		SS	df	MS	F	p	Post Hoc
		Levene's Test	*p*						
Countries	Between Groups	**1.55**	.21	27.75	2	13.87	66.01	< .001	P>M>T
	Within Groups			195.43	930	0.21			
	Total			223.18	932				

**Note** P = Philippines; T = Thailand; M = Malaysia.
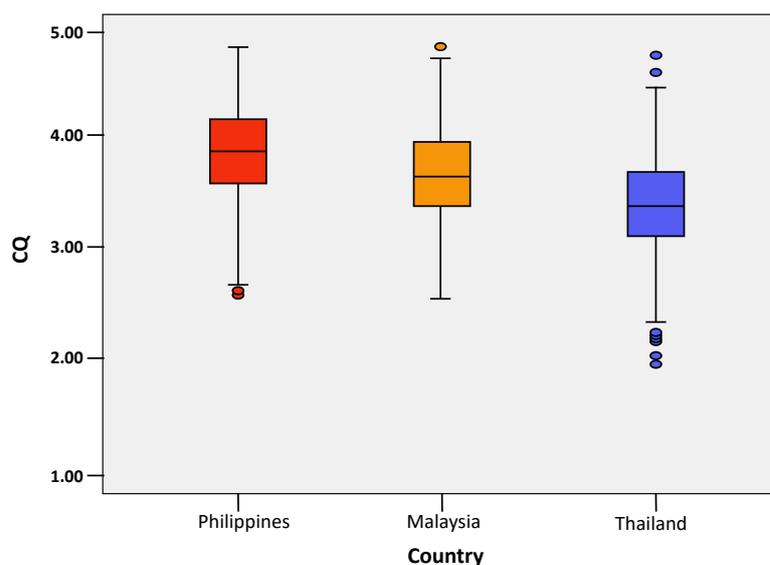
Fig. (2). Cultural intelligence mean for each country.

Table 5. Comparison of institutional support among the three countries.

Variables		Test of Homogeneity		SS	df	MS	F	p	Post Hoc
		Levene's Test	p						
Countries	Between Groups	3.72	.03	11.69	2	5.84	17.88	<0.001	P>T
	Within Groups			303.98	930	0.33			P>M
	Total			315.67	932				

Note P = Philippines; T = Thailand; M = Malaysia.
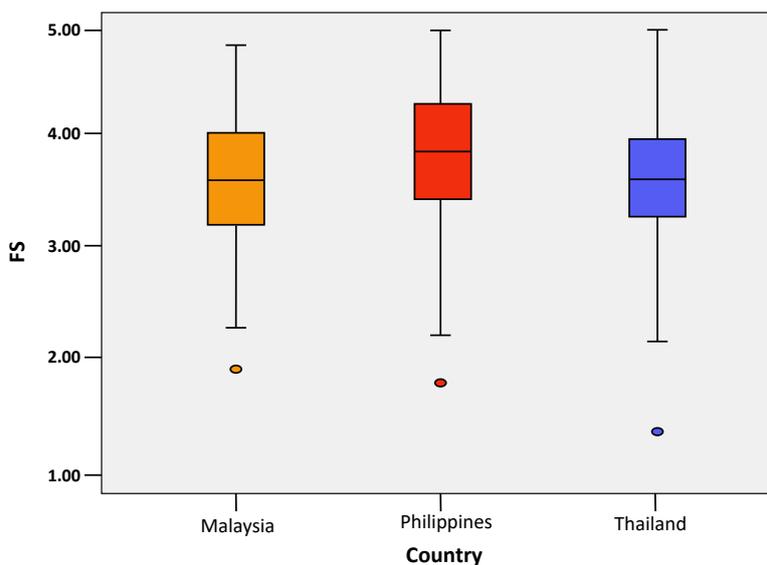
Fig. (3). Institutional support mean for each country.

Table 6. Loadings of indicators of variables.

Institutional Support	b^	SE	p		Cultural Intelligence	b^	SE	p
Curriculum	0.86	0.5	< .001		Knowledge CQ	0.84	0.04	< .001
Extra-curricular Activities	1.00	0.00	999.00		Affective CQ	0.72	0.05	< .001
Lecturer	0.96	0.04	< .001		Behavioral CQ	1.00	0.00	999.00

$p < .05$.

Table 7. The results of the structural equation model of cultural intelligence.

Variables	Effect of Cultural Intelligence			
	b^	SE	t	p
Institutional Support (IS)	0.57	0.11	5.04	< .001
Interaction between Countries and IS	-0.01	0.06	-0.24	.80

AIC = 6887.00; BIC = 7002.27.

Regarding the comparison of institutional support in terms of the importance of the cultural differences among the three countries, the ANOVA analysis results showed that the institutional support mean scores for the three countries were different at a statistical significance level of .05 (F = 17.88, p < .001). In terms of the variance between groups, the results of Levene's test indicated that there was a statistically significant difference at the level of .05. When the *post hoc* test was carried out using the Dunnett T3 method, the results showed that the institutional support mean score for the Philippines was higher than that for Thailand and Malaysia at a statistical significance level of .05. The details are shown in Table **5** and Fig. (**3**).

4.3. A Structural Equation Model

The components of cultural intelligence, comprising cognitive CQ, affective CQ, and behavioral CQ, and the components of institutional support, namely curriculum, extra-curricular activities, and lecturer, were thoroughly analyzed.

Their loadings are shown in Table **6**.

The structural equation modeling results showed that the Akaike information criterion (AIC) value was 8821.20, and the Bayesian information criterion (BIC) value was 8922.81. The effect size of the country was -0.01 with no statistical significance at the level of .05. It could be said that, regardless of the country, institutional support regarding the importance of cultural differences affected cultural intelligence with an effect size of 0.57 at a statistical significance level of .05 (p < 0.001). The details are shown in Table **7**.

5. DISCUSSION

From the analysis of the effect of institutional support regarding the effect of cultural differences on cultural intelligence, it was found that, regardless of the country, institutional support affected the cultural intelligence of students at a statistical significance level of .05. Thus, it can be implied that when educational institutions support the importance of cultural differences, it will help to enhance the cultural intelligence of students. This is in line with many previous studies on the factors affecting the cultural ability, or intelligence of students and professionals, which suggest that encouraging and supporting individuals to have knowledge and understanding of cultural differences are important factors affecting the level of cultural intelligence [23, 31, 32]. In addition, creating an environment that motivates the understanding of cultural differences and cultural adaptation is a way to develop behavior management skills suitable for multicultural settings [16, 33, 34]. Additionally, cross-cultural training programs can increase the cultural skills, professional knowledge, and cultural intelligence of people at a statistical significance level of .05 [35 - 37].

Based on a health research study in the Philippines, it was found that the experiences gained from living in a multicultural environment and caring for patients with diverse cultural backgrounds have a positive influence on cultural competence [16]. In Thailand, research findings suggest that an instructional style that helps to promote the importance of cultural differences and an instructional curriculum that integrates cross-cultural healthcare knowledge and the development of healthcare for specific patients can enhance the cultural competence of nursing students [36]. This is consistent with a research study in Malaysia, which indicated that the ability to communicate in an official language, such as English, is important for the development of cultural skills. It was also found that the context of a multicultural society has an effect on cultural learning skills and can motivate students to achieve academic goals and commitments [38, 39].

Based on the results of this study, the following guidelines for promoting the cultural intelligence of students were developed, focusing on three main areas.

5.1. Curriculum Design

Cultural skills, one of the soft skills that are different from technical abilities, should be included in student performance goals and integrated with professional knowledge [37]. The concept of cultural skills should be applied in theoretical and practical courses both in terms of knowledge and behavior in

order to foster good attitudes and understanding of cultural differences among individuals throughout the instructional period [36].

5.2. Creation of Extra-Curricular Activities

Extra-curricular activities should be carried out along with regular instruction in order to develop the cultural intelligence of nursing students and to create various kinds of experiences [33]. Collaborative activities among students, the integration of academic and real-life experiences, and openness to various ideas should be encouraged in order to increase living and working skills and develop the self-learning abilities needed for lifelong learning [40, 41]. This is because nursing professionals have to continuously develop themselves to keep up with social changes [36]. Extra-curricular activities that should be conducted include: 1) group discussions and the exchange of opinions and experiences among multicultural peers, 2) learning from reliable technological media, learning from current case studies, and using cultural intelligence skills to solve problems [42], 3) visiting multicultural communities and providing nursing students with opportunities to deal with problems in real situations [41], and 4) foreign student exchange programs [43].

5.3. Motivating Lecturers

It is important to raise awareness of the importance of cultural differences among lecturers and prepare them for teaching and learning each semester. This is because lecturers can motivate and encourage students to recognize the importance of learning [44]. Lecturers should build student engagement in learning about beliefs and cultures so that students can efficiently apply their knowledge in actual work situations after graduation [45]. Lecturers should also transfer the tacit knowledge gained from their cultural experiences to students during classes [35].

Therefore, the application of the findings from the present study can be used for nursing administration. Nursing educational policy should include a guideline for the development of cultural skills in the curriculum and should be a part of the nursing school accreditation. Regarding the development of lecturers' cultural skills, educational institutions should support opportunities to improve the cultural intelligence of transferring and practicing nursing students.

CONCLUSION

In this study, the data collection was carried out in three countries, the Philippines, Thailand, and Malaysia, as indicated previously. The research results suggested that educational institutions can help nursing students develop their cultural skills in three ways: 1) in terms of curriculum design, such as adding knowledge about cultural, religious, and ethnic beliefs, and focusing on cultural competence theories for nursing professionals; 2) through extra-curricular activities, such as conducting extra-curricular activities to enhance knowledge sharing and to create opportunities to meet people from different ethnic and religious backgrounds so that students can use the obtained experiences to develop their professional

nursing skills; and 3) motivating lecturers, for example building good attitudes in terms of individual differences, improving their cultural competence, and teaching students skills related to work and life in order to produce healthcare professionals that can work in a multicultural society and cope with future changes in an efficient way.

ETHICAL APPROVAL AND CONSENT TO PARTI-CIPATE

The study was approved by The Human Research Ethics Committee of Thammasat University (Science), Thailand (Code of ethics: COA No. 139/2561).

HUMAN AND ANIMAL RIGHTS

No animals were used in this study. The data collection of human research procedures was conducted after improvement by The Human Research Ethics Committee and was in accordance with the Helsinki declaration.

CONSENT FOR PUBLICATION

Informed consent was obtained from all participants for the publication of this paper.

STANDARDS OF REPORTING

STROBE guidelines and methodologies were followed for this study.

AVAILABILITY OF DATA AND MATERIALS

Not applicable.

FUNDING

CONFLICTS OF INTEREST

The author declares no conflicts of interest, financial or otherwise.

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