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Original Article

Cultural intelligence and its relation with professional competency in nurses

Flora Rahimaghaee [1*], Rashim Mozdbar [2]

[1] Department of Medical-Surgical Nursing, School of Nursing and Midwifery, Tonekabon Branch, Islamic Azad University, Tonekabon, Iran
[2] Department of educational sciences, Tonekabon Branch, Islamic Azad University, Tonekabon, Iran

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ABSTRACT

Background & Aim: Every pioneer healthcare-related organization should consider investment on enhancing the competency of the nurses. Since nurses would encounter patients from different cultures, cultural intelligence is considered an important capability for nurses. The aim of this study was to evaluate the relation between cultural intelligence and professional competency.
Methods & Materials: This correlational study was conducted on 274 nurses who were selected using multistage random sampling. The sample size was calculated using the Cochran's formula. Data gathering tools were Ang's cultural intelligence questionnaire and Cowan's professional competency questionnaire. The validity of the tools was evaluated using content and face validity and their internal consistency was measured using Cronbach's α (0.88 for cultural intelligence and 0.89 for professional competency). Data were analyzed using descriptive statistics, Pearson correlation test and multiple regressions.
Results: Results showed that the mean score of professional competency among the nurses was 226 ± 17.3 and of cultural intelligence was 88.2 ± 11.32. The dimensions of metacognitive ($r = 0.568$, $p < 0.001$), motivational ($r = 539$, $p = 0.007$) and behavioral ($r = 0.266$, $p = 0.027$) of the cultural intelligence had a positive meaningful relation with professional competency of the nurses. Also, the dimension of metacognitive with the value of 0.423 had the highest predictive power for professional competency.
Conclusion: Considering the relation between cultural intelligence and professional competency of the nurses and the predictive power of some of its dimensions in estimating the professional competency of the nurses, it seems that the concept of cultural intelligence could be attended for improving and enhancing the quality of provided cares.

Introduction

A pioneer healthcare organization, which is interested in advancement, should consider an investment in improving the nurses with the purpose of success in care provision (1). Many of the third-millennium organizations are multi-cultural and this would lead to extensive multilateral relations that require professional competency of the personnel (2). Therefore the subject of qualified and competent personnel is a serious topic in the field of human resources management and organizational behaviors and healthcare organizations are one of the organizational groups considered in this regard (3). Changes in the current healthcare systems are inevitable and constant growth and development of the nurses' competency, as the largest group of working personnel in the health care team, is necessary (4). Although the importance of improving nurses' competency has always been emphasized in the literature, its related and effective factors have not yet been fully explained and defined. Therefore determining effective factors on nurses' professional success is necessary. For example, nurses believe that capability in understanding the patients and increasing

* Corresponding Author: Flora Rahimaghaee, Postal Address: Tonekabon Branch, Islamic Azad University, Tonekabon, Iran. Email: frahimaghaee@gmail.com

their communicational skills are signs of their professional competency which could be effective for the improvement of their performance (5). Interacting with people from different cultures is a requirement for having desirable communications. It seems that cultural intelligence could be beneficial in strengthening these desirable communications (6). Nowadays, cultural diversity is very common among patients and nurses would encounter it on a daily basis so, having cultural intelligence is considered an important capability for nurses in communicating with the patients (7-9).

Ott and Michailova (2016) by reviewing the studies about cultural intelligence from 2002 to 2015 revealed that this topic has become important in interdisciplinary researches and required more investigation at individual's level for employees at the workplace and difference disciplines (10). Cultural intelligence is the effective ability when encountering other cultures and in fact, is a general set of abilities related to conditions with cultural diversity (8). Cultural intelligence is the understanding of people's appearance and reality intellectually and practically, and it also provides us a context and language to recognize the differences and invest in them, not to tolerate and ignore them (11). Cultural intelligence is presented in four dimensions of metacognitive, cognitive, motivational and behavioral. The metacognitive dimension would help in understanding the cross-cultural experiences and also represents the processes that people would apply for acquiring and understanding cultural knowledge (12). Cognitive dimension indicates individual's perception of cultural similarities and differences and represents individual's general knowledge and intellectual and cognitive plans of other cultures. The motivational dimension is individual's interest in trying other cultures and interacting with people from different cultures and eventually the behavioral dimension is individual's ability to adapt to a series of verbal and non-verbal behaviors which are appropriate for cross-cultural interactions (13).

People with high cultural intelligence would enjoy encountering new cultures (14). In fact, cultural intelligence would lead to creativity, flexibility and more accurate viewpoint of different cultural environments (15, 16). Cultural intelligence would cause appropriate behaviors based on verbal and non-verbal abilities and would help to coordinate the application of cultural knowledge when encountering the role and performance (17). Since Iran is a multicultural country and the personnel of an organization might be from different ethnicities and regions that have come together in a system, personnel of organizations must have the ability to make communication with people from different cultures (18).

As it was mentioned, hospitals are one of the organizations in which, due to their specific features such as different wards and patients from different cultures, personnel would encounter cultural diversity and this would indicate the importance of cultural intelligence (19). Since effective interaction and communication with others are one of the most important parts of a nurse's job and people with different cultural backgrounds, which have been intertwined with their behaviors and manners, would come to the hospitals, the cultural intelligence factor could be used efficiently in hospitals (20). Researchers believed that therapists' and nurses' high cultural intelligence with its positive effects and effective leadership power, could lead to better therapeutic outcomes for the patients (21, 22). Studies have shown that lack of cultural intelligence has been the reason for many organizational failures because, without it, despite being

highly intelligent and skilled, people would fail in their interactions (15, 20). Therefore, even today, in decision makings and organizational changes, there is a need for strengthening cultural intelligence and more studies in this fields are necessary (16, 23, 24). So, the present study was aimed to evaluate the relation between cultural intelligence and professional competency in nurses so that its results would be able to help the performance and efficiency of the nurses in their unique workplaces.

Methods

In this d cross-sectional correlational study, participants were selected by multistage random sampling from eligible male and female nurses with no managerial positions, a diploma, bachelor's degree or master's degree and different work experience at general and special wards of Imam Sajjad hospital of Ramsar and Shahid Rajaei hospital of Tonekabon (25). First all of the nurses of the both hospitals were divided into two classes of nurses who work at general wards and those who work at specialized wards. Then, at each of these two classes, nurses were divided into subclasses based on their gender and educational level. Then, proportional to the number of nurses in each subclass, participants were randomly selected. In this sampling method participants are considered better representatives of the study population and therefore results could be generalized easier. Using the Cochran formula, 274 nurses were selected from the 430 nurses of the study population.

After determining the sample size, by taking permission from the organization and written consent from the participants, Ang's Cultural Intelligence questionnaire and Cowan's Professional Competency questionnaire were distributed among the participants and data were gathered. First the aim of the study was explained to the participants and while completing the questionnaires, the researchers were present so that the participants would not affect each other's answers and fill the questionnaires by themselves. It must be noted that this study was approved by the research council of the Islamic Azad University, Tonekabon Branch with the ethics code of 33621.

Ang's cultural intelligence questionnaire (26) is a standard questionnaire with 20 questions which evaluate the metacognitive (4 questions 1 to 4), cognitive (6 questions 5 to10), motivational (5 questions 11 to 15) and behavioral (5 questions 16 to 20) dimensions of cultural intelligence. This questionnaire is scored on a 7-point scale from completely agree to completely disagree. The basis for reporting the results of cultural intelligence and its aspects were the mean scores gained by the participants; higher mean score would indicate higher cultural intelligence. Cowan's professional competency questionnaire (27) would evaluate nurses' professional competency through self-report. This questionnaire has 63 questions about professional development which is scored on a 4-point Likert scale and the choices are always, sometimes, rarely and never. For this variable also results were based on the gained mean scores by participants and higher mean score would indicate higher professional competency. To determine the validity of the questionnaires face and content validity was used, in a way that questionnaires were reviewed by some of the academic members. Also to evaluate the face validity and readability of the questionnaires, some nurses who were not selected for participation in the study were asked to fill them. Reliability of the questionnaires was approved using Cronbach's α. For this purpose, 30 questionnaires were distributed among 30 nurses from the study population (who were

not selected as participants). The Cronbach's α for the cultural intelligence questionnaire was 0.88 (0.66 for metacognitive dimension, 0.89 for cognitive dimension, 0.76 for motivational dimension and 0.81 for behavioral dimension) and for the professional competency questionnaire was 0.89.

Based on the research hypotheses, besides using descriptive statistics, after evaluating the normal distribution of the data, Pearson correlation coefficient and multiple regression analysis were used. All of the analyses were conducted using SPSS software version 19.

Results

Results of descriptive analysis of the data revealed that most of the participants were female (93.1%), 30 to 50 years old (80.4%), had a bachelor's degree (92.1%) and were officially employed (63.3%). 68.6% of the nurses were working at general wards and 31.4% at specialized wards (Table 1).

Results showed that the mean score of cultural intelligence was 88.02 ± 11.32; meaning that the mean of cultural intelligence among the participants was higher than the average of measurement indicator.

The behavioral dimension of cultural intelligence had the highest mean score of all (5.02); meaning that the score of the behavioral dimension of cultural intelligence in most of the participants was higher than its other dimensions. On the other hand, the score of metacognitive dimension was the lowest in most of the participants (4.83). The mean score of nurses' professional competency was 226 ± 17.3 (Table 2). Regarding the professional competency of the studied nurses, results showed that its mean score was higher than the average score that can be obtained from the questionnaire.

Table 1. Frequency distribution of the participants' demographic characteristics

Variables		Number (percent)
Age		
	Under 30 years old	55 (24.6)
	30-40 years old	80 (35.7)
	40-50 years old	80 (35.7)
	Above 50 years old	9 (4)
Gender		
	Male	19 (6.9)
	Female	255 (93.1)
Educational level		
	Associate's degree	5 (2.3)
	Bachelor's degree	197 (92.1)
	Master's degree	12 (5.6)
Employment status		
	Contractual	41 (21.8)
	Corporative	4 (2.1)
	Experimental	24 (12.8)
	Official	119 (63.3)
Type of the ward		
	General	188 (68.6)
	Specialized	86 (31.4)

Results of Pearson test revealed a strong positive relation between cultural intelligence and professional competency ($p < 0.001$, $r = 0.685$). This relation was also positively significant for the metacognitive ($p < 0.001$, $r = 0.568$), motivational ($p = 0.007$, $r = 0.539$) and behavioral ($p = 0.027$, $r = 0.266$) dimensions of the cultural intelligence; but the cognitive dimension of cultural intelligence had no significant relation with nurses' professional competency ($p = 0.54$, $r = 0.090$). (Table 2)

To determine the effect of each of the dimensions of cultural intelligence on predicting nurses' professional competency and also determining the best predictor for the changes in nurses' professional competency, simultaneous multiple regression was conducted on the predicting variables.

Comparing the beta weights indicated that metacognitive dimension with a value of 0.423 was the most powerful predictor for nurses' professional competency, and a change of one unit in this variable would change professional competency by 0.423 units. Furthermore, the significant level of t-

statistic showed that regression's coefficients and the constant value for the mentioned variables are not zero and these variables would affect the dependent variable. But two variables of behavioral and cognitive were eliminated from the equation for having a significant level of more than 0.05 (Table 3).

Table 2. The relation between cultural intelligence and its dimension with professional competency and the mean scores of the variables

Variable	Correlation coefficient of professional competency	The significant level	Mean ± SD
Cultural intelligence	r = 0.685	P < 0.001	88.02 ± 11.32
Cognitive dimension	r = 0.090	P = 0.54	23.65 ± 8.66
Metacognitive dimension	r = 0.568	P < 0.001	19.32 ± 4.64
Motivational dimension	r = 0.539	P = 0.007	20.93 ± 5.04
Behavioral dimension	r = 0.266	P = 0.027	25.1 ± 5.98

Table 3. A summary of the simultaneous regression model for cultural intelligence on professional competency of nurses

The variables for predicting the model	B	Standard error	Beta	t	Significant level
Metacognitive	2.09	0.243	0.423	8.611	0.000
Cognitive	0.196	0.103	0.092	1.899	0.059
Motivational	1.437	0.187	0.374	7.685	0.000
Behavioral	0.146	0.150	0.048	0.975	0.330

Discussion

The present study showed a significant positive relation between cultural intelligence and nurses' professional competency meaning that changes in the cultural intelligence would also change nurses' professional competency. Results of the present study were in line with the studies of Rahmani (2015) and Abdi et al (2014); these studies also found a relation between cultural intelligence and nurses' performance (7, 9). However, Ahangchian et al (2012) and Darvish et al (2013) found no significant relation between cultural intelligence and nurses' performance in their studies (8, 19). Considering the limited number of conducted studies on this subject, the researchers reviewed studies in other fields and found the results about the relation between cultural intelligence and performance such as manager's performance; those results also indicated the relation between cultural intelligence and the performance of the participants. For example, Hosseini Nasab and Ghaderi (2011), Rahim Nia, Mortazavi and Delaram (2009), Ezzatabadi (2012), Bogilović and Škerlavaj (2016), and Ott and Michailova (2016) reported a positive significant relation between cultural intelligence and managers' performance and efficiency (10, 12, 16, 21, 28). Also in the study of Evans (2012) and Simmons-Massenburg (2015) more career opportunities were created in organizations and international markets by strengthening cultural intelligence (29, 30). Stokes (2013), Mullinax (2013) and Brannen (2016), who evaluated the effect of cultural intelligence on transformational leadership ability and making differences, revealed that the higher the level of cultural intelligence, the more effective this ability (22, 24, 31). Although the mentioned studies have not directly evaluated the relation between cultural intelligence and professional competency, but have mentioned the positive effects of this type of intelligence on elements such as effective leadership, efficiency and performance, which are similar to competency and adequacy. So, these results would approve the results of the present study.

These items also apply for the metacognitive dimension of cultural intelligence meaning that the higher the

levels of metacognitive dimension of cultural intelligence, the higher the level of professional competency. It could be said that the metacognitive factor of cultural intelligence would help people perceive cross-cultural experiences and work with more competency at different positions such as hospitals. In this regard, results of a study by Alizadeh and Naeiji (2007) showed that the metacognitive factor of cultural intelligence has a positive significant effect on achievement motivation; it might be said that this positive significant effect on advancement and success is similar to the relation of this dimension with competency and promotion and consequences in similar results (32). Also Parhizgar (2010) in their study revealed that metacognitive dimension of cultural intelligence would help to perceive cross-cultural experiences and would make people work more effective in different positions (33). Stokes (2013) in their study evaluated the relation between cultural intelligence and leadership and reported that metacognitive dimension as the most powerful dimension of cultural intelligence (31). In the present study also metacognitive dimension had the highest relation with professional competency of nurses. According to the results of the present study and other studies, it could be concluded that professional competency could be improved by strengthening the metacognitive dimension of cultural intelligence.

Results about the motivational dimension of cultural intelligence also revealed a significant positive relation with professional competency. Researchers believed that people with motivated cultural intelligence have interest in interacting with people from other cultures and work effectively in cultural interactions, because their motivation would lead to more efforts for getting satisfaction and providing better services and enjoying the confrontation with new cultures. It would cause effective communication and more professional competency. In this regard results of a study by Hosseini Nasab and Ghaderi (2011) showed that motivational dimension had a positive significant relation with performance (12). Also in the study of Stokes (2013) the motivational dimension was significantly effective in the relation between cultural intelligence and transformational change-making leadership (12, 31). On the other hand, some studies reported different results with the achieved results in the present study. For example in the study of Alizadeh and Naeiji (2011), which evaluated the relation between cultural intelligence and entrepreneurship and duty, no significant relation regarding the motivational dimension was not observed. No reason has been mentioned for lack of a significant relation in that study but this difference might be due to the difference in the studied participants of the present study (32).

Results of the present study showed a significant positive relation between the behavioral dimension of cultural intelligence and professional competency. It could be said that the behavioral dimension is actually individual's capability in adapting with verbal and non-verbal which are appropriate for cross-cultural interactions and by creating proper changes in the behavior at different positions could make the actions and tasks more effective. In this regard results of the studies by Chen, Lin and Swangpattanakul (2011), Hosseini Nasaba and Ghaderi (2011) and Rahim Nia, Mortazavi and Delaram (2009) revealed that behavioral dimension has been the most effective dimension of cultural intelligence in functional performance (12, 28, 34). Although the mentioned studies have not directly evaluated the relation between the behavioral dimension of cultural intelligence and professional competency, but the effect

of the behavioral dimension of cultural intelligence on elements such as performance and efficiency, which are close to the concept of competency, could approve the results of the present study.

Unlike the other dimensions of cultural intelligence, no significant relation was observed between the cognitive dimension of cultural intelligence and professional competency. Results of the present study indicated that, among the dimensions of cultural intelligence, the cognitive dimension has not been able to relate to professional competency as much as other dimensions. Results of the study by Box (2014) were also similar to the results of the present study (15). However, Rahim Nia, Mortazavi and Delaram (2009) and Ezzat Abadai (2011) in their study resulted that cognitive dimension has been one of the strongest dimensions in relation with performance (21, 28).

Besides the existing relation between cultural intelligence and professional competency, results showed that cultural intelligence could be a predictor for the manner of professional competency. But to find which dimension had a greater role in this prediction, regression analysis showed that, from different dimensions, the metacognitive dimension had the highest effect in the process of predicting professional competency and after that, the motivational dimension had the highest effect on predicting professional competency. Two variables of behavioral and cognitive were eliminated from the equation for not having a significant level of more than 0.05. It could be said that the organizations of today and tomorrow would be working in an indistinctive competitive and complex environment which require the professional competency of the human resources for their survival. So, to predict the professional competency among nurses, measuring their cultural intelligence, and especially its metacognitive and motivational dimensions, could be used. Results of the present study were similar to the results of Rahim Nia, Mortazavi and Delaram (2009) which indicated that the priority of the elements of cultural intelligence for determining the performance of the personnel was motivational, metacognitive, behavioral and cognitive, respectively (28). Also in the study of Ezzat Abadi (2012) motivational and metacognitive dimensions had the highest effects on the process of patients' recovery (21).

The only limitation in the present study was using only questionnaires for gathering the data; So it is recommended that, for approving and strengthening the results of such studies, other methods such as observation and interview would also be used along with questionnaires.

Results of the present study showed that dimensions of cultural intelligence, except for the cognitive dimension, had a positive significant relation with professional competency. Also the metacognitive dimension had the highest effect in the process of predicting the changes in nurses' professional competency. So, cultural intelligence is not an ignorable subject; because hospitals are the core centers for communicating with people from different groups and cultures. Based on the achieved results it is recommended that hospitals and authorities of human resources should consider cultural intelligence toward the goals of improving the quality of cares. Since the capacity of cultural is expandable and regarding this subject and focusing on forces with higher cultural intelligence could be beneficial, and also considering that a significant part of skills and capacities of cultural intelligence could be acquired, organizations should regard a special place for strengthening this type of intelligence in their educational programs and by using

official and unofficial training, move toward improvement of cognitive and behavioral skills of nurses.

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Conflict of Interest

The authors of this study declare no conflicts of interest.

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