Nurses' Cultural Competence: A Meta-analysis

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Abstract

Cultural competence in nursing is essential in providing care that is centered around the unique, individual needs of patients from different cultures. This study used a meta-analysis research method to determine the different predictors of registered nurses' cultural competence and their effect on cultural competence. Articles from 2010-2020 were collected on June 14-16, 2020 from research databases EBSCOhost, PubMed, and Google Scholar using the following search terms: *nurse cultural competence, nurses cultural competency*, *nurse transcultural competence*, *nurse' transcultural competency, nurse transcultural care*, and *nurse cultural care*. From an initial of 170 studies, six studies qualified for inclusion in the meta-analysis based on the study criteria. From the six studies, 19 significant predictors of registered nurses' cultural competence were identified, such as *cultural skill, cultural desire, cultural encounter, cultural knowledge, attitude, cultural awareness, diversity training, empowerment, length of service, empathy, marital status, the experience of cultural education, work experience, experience caring for diverse patients, age, working in a specialty area, work shift, responsibility, and confidence level*. Using the Hunter-Schmidt method, a significantly small correlation effect size ($r = 0.241$) was found. There was no publication bias as revealed in the Rosenthal Fail-Safe N value of 3222. The results supported and confirmed Leininger's Culture Care theory. It affirmed that the competence of nurses in caring for clients with different cultures is needed and important to provide culture-specific nursing care.

Keywords: nurse, cultural competence, meta-analysis

INTRODUCTION

Providing competent nursing care to clients of different cultural backgrounds is very challenging and demanding because there is a constant tension among barriers, cultural manifestations, and the ethical responsibility of care. Along with these barriers are also personal and contextual factors of the client and the nurse themselves that may hinder the provision of appropriate care (Murcia & Lopez, 2016). Culture is more than just an ethnicity or race and involves many more factors such as age, gender, religion, education, socioeconomic status, occupation, and sexual orientation (Hart & Moreno, 2016; Rubio, 2019). It is important that nurses recognize what culture is and the influence it has in caregiving because the inability to do so can result in stigmatizing and negative attitudes. In the United States, multiracial and multiheritage individuals have been described as invisible and the fifth minority, often experiencing marginalization, disparities, cultural pain, and unmet needs (Jeffreys & Zoucha, 2018). In other studies and public health care reports, it was indicated that various cultural groups perceived that

they received differential treatments from others and had negative experiences when given nursing care (Shepherd et al., 2019). Thus, nurses and other healthcare professionals need to be equipped and committed to the delivery of culturally competent care (Murcia & Lopez, 2016). Many studies explored the relationship of cultural competency to the demographic variables, with different cultural constructs, utilizing varied instruments, in diverse samples. Thus, the aim of this study was to determine the significant predictors of cultural competency among registered nurses based on previous studies done, to assess the effect size, and to check the publication bias.

METHODOLOGY

This study utilized the meta-analysis research design. This type of design cumulates and summarizes the conclusions and discoveries of previous research studies done to either identify the overall measure of a treatment's effects or to strengthen and derive conclusions made in various studies done on a single topic of research. Because meta-analysis gathers a whole body of studies done on the same topic with different results and conclusions, it reduces bias and produces more reliable findings (Shrestha, 2019).

The following inclusion criteria were considered to select the research studies: peer-reviewed articles discussing predictors of cultural competence of registered nurses, published in English between 2010-2020, full text. The research databases that were used include EBSCO, PubMed via NCBI, and Google Scholar. Research studies were retrieved on the following dates: June 14-16, 2020. The following exclusion criteria were considered in selecting the studies: Non-English languages, abstract research papers, qualitative studies, and research studies found before or after June 14-16, 2020. Research studies that discuss the predictors of cultural competence of nurse clinical instructors/ teachers, school nurses, and general health care providers were excluded.

The following search terms were used: nurse cultural competence/competency, nurse transcultural competence/ competency, nurse transcultural care, nurse cultural care. From the research studies identified, screening was done to see whether there were any duplicate studies gathered and to determine the relevancy of the research studies found. Duplicate studies and research studies that were irrelevant to the quantitative synthesis were removed. The researchers then assessed the eligibility of the studies gathered to determine whether they were acceptable and valid for the research study in terms of the inclusion and exclusion criteria. Next, the r values for each variable indicated in the research studies included were identified and used to calculate the overall effect size using the Hunter Schmidt method. Evaluation of publication bias was also calculated using the Rosenthal Fail-Safe N method. The qualified papers were then reviewed and summarized to determine the predictors affecting cultural competence.

Figure 1 shows the steps undertaken to determine the qualified research studies. A total of 170 journals were initially obtained from the research databases. After 50 duplicates of journals were removed, a total of 120 journals remained. When each journal was screened for its title and abstract, 55 journals were excluded, and 65 journals were assessed for eligibility based on their full-text articles. After another thorough review, 40 journals were excluded (no relevant outcome: 19; lack of information: 1; general health care provider/ medical practitioner: 6; nurse faculty/teachers: 2; nursing students: 8; qualitative study: 3; not- English: 1) and a total of 25

journals remained. In proceeding to the final assessment for eligibility and relevancy, 19 journals were excluded (lack r/r2 value: 10; cultural self-efficacy domain only: 5; repeated study: 1; other: 3), and 6 of the studies were approved to be included in the quantitative synthesis (Bai et al., 2020; Suk et al., 2018; Heitzler, 2017; Bunjitpimol et al., 2015; Lin et al., 2015; Riley, 2010).

Figure 1: Flow Diagram of Study Selection
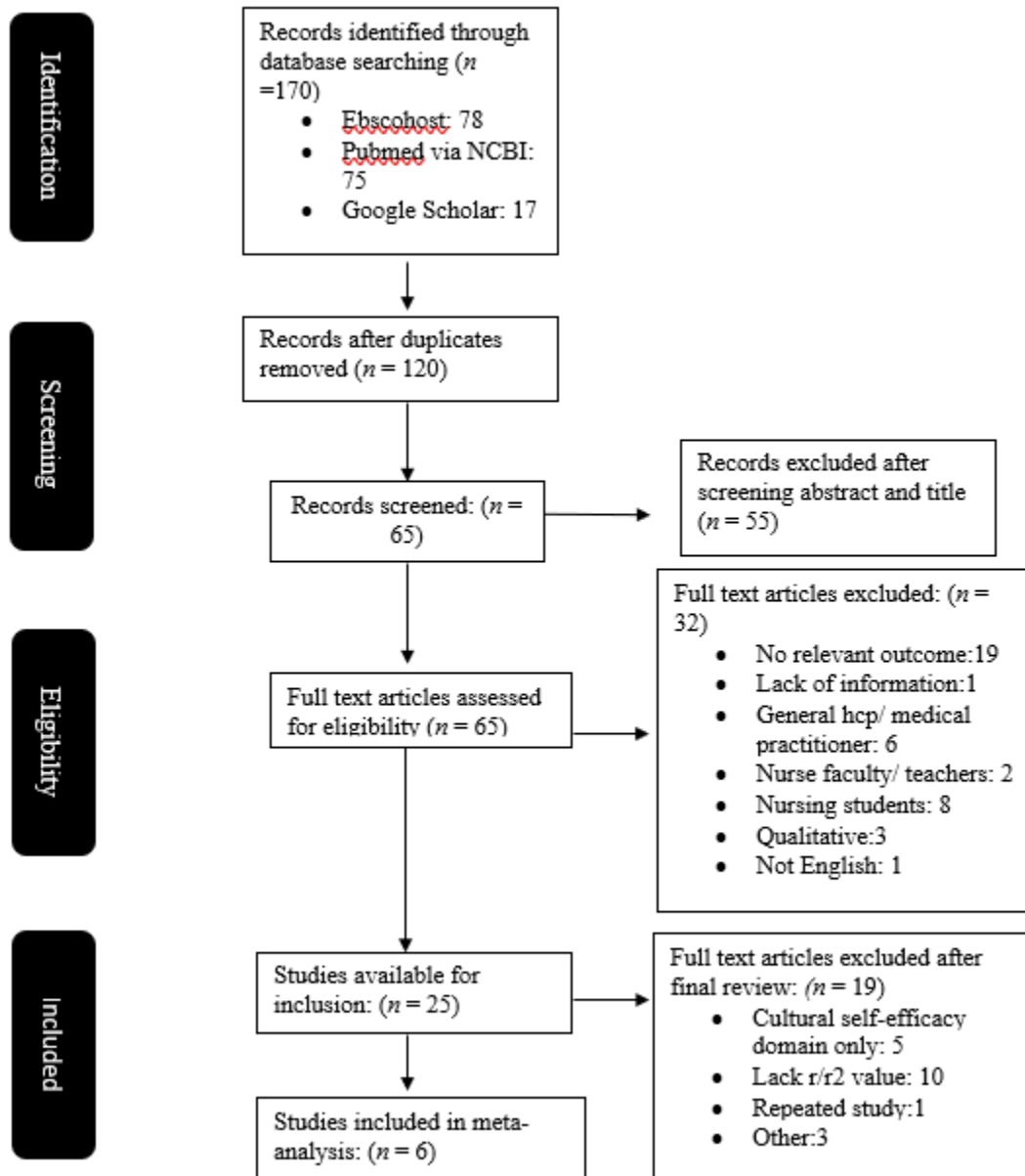
The method used to calculate the overall population effect of the research studies included was the Hunter-Schmidt Random Effects model. The Hunter-Schmidt method uses a simple mean to estimate the population effect. The effect size estimate, *r,* is affected by the sample size, *n,* of each

research study. The population effect is calculated by multiplying each effect size by the sample size on which it is based, then dividing it by the sum of sample sizes (Field & Gillett, 2010). According to Cohen, measurement of effect size is ranked into three different groups: small ($r = 0.1$), medium ($r = 0.3$), and large ($r = 0.5$) (Sullivan, 2012). From the overall effect size estimate, it can be determined how influential the predictors are towards the cultural competence of registered nurses. Pearson's correlation coefficient, *r,* was used to determine how demographic variables correlate to registered nurses' cultural competency in their care to patients. Rosenthal *Fail-Safe N* was used to test for publication bias that may have influenced the results of the meta-analysis. This method calculates the number of additional negative studies that would be needed to raise the *P*-value to a number that indicates that the effect is not significant ($> .05$). The greater the number, the less likely there is the existence of publication bias, while a lower number implies that there is a likelihood of publication bias.

RESULTS AND DISCUSSION

Predictors of Registered Nurses' Cultural Competence

Out of the six included research studies conducted among nurses, the researchers gathered 19 ($k = 26$) predictors of registered nurses' cultural competence. The predictors are summarized in Table 1.

Table 1: Predictors of Cultural Competence among RNs

Predictors	Author/s	Year	N	r
Cultural Skill	Riley	2010	53	0.793
Cultural Desire Riley		2010	53	0.727
Cultural Encounter	Riley	2010	53	0.718
Cultural Knowledge	Riley	2010	53	0.710
Attitude	Bunjitpimol Somrongthong & Kumar	2015	166	0.584
Cultural Awareness	Riley	2010	53	0.583
Diversity Training	Heitzler	2016	132	0.413
Empowerment	Suk, Oh, & Im	2018	143	0.319
Length of ServiceRiley		2010	53	0.294
Empathy	Suk, Oh, Im	2018	143	0.284
Marital Status	Bunjitpimol Somrongthong & Kumar	2015	166	0.275
Experience of Cultural Education	Lin et al.	2015	221	0.273

Length of Service	Lin et al.	2015	221	0.263
Work Experience	Heitzler	2016	132	0.250
Experience Caring For Diverse Patients	Lin et al.	2015	221	0.221
Age	Bunjitpimol Somrongthong & Kumar	2015	166	0.214
Experience of Cultural Education	Suk, Oh & Im	2018	143	0.207
Working in Specialty Area	Heitzler	2016	132	0.190
Work Shift	Bunjitpimol Somrongthong & Kumar	2015	166	0.189
Responsibility	Bunjitpimol Somrongthong & Kumar	2015	166	0.164
Cultural Care Knowledge	Bai et al.	2020	300	0.156
Cultural Care Awareness	Bai et al.	2020	300	0.156
Confidence Level	Bunjitpimol Somrongthong & Kumar	2015	166	0.166
Cultural Care Encounters	Bai et al.	2020	300	0.126
Cultural Care Skills	Bai et al.	2020	300	0.126
Age	Heitzler	2016	132	- 0.200

Table 1 reveals that among the predictors, cultural skill has the highest with a *r* value of 0.793 (*r* = 0.126), followed by cultural desire (*r* = 0.727), cultural encounter (*r* = 0.718, *r* = 0.126), cultural knowledge *(r* = 0.710, *r* = 0.156), attitude (*r* = 0.584), cultural awareness (*r* = 0.583, *r* = 0.156), diversity training (*r* = 0.413), empowerment (*r* = 0.319), length of service (*r* = 0.294, r = 0.263), empathy (*r* = 0.284), marital status (*r* = 0.275), experience of cultural education (*r* = 0.273, *r* = 0.207), work experience (*r* = 0.250), experience caring for diverse patients (*r* = 0.221), age (*r* = 0.214, *r* = - 0.200), working in a specific specialty area (*r* = 0.190), work shift (*r* = 0.189),

responsibility (r = 0.164), confidence level (r = 0.137). Among the predictors, age was found to have the lowest r value of - 0.2.

The predictor with the greatest relationship to the cultural competence of registered nurses is the cultural skill (r = 0.793). This study was conducted by Riley (2010) in the United States of America with n = 53 practicing nurses entering the RN-BSN program. This exploratory, descriptive study showed a positive correlation between cultural skill and the overall cultural competence (IAPCC-R scores) of the practicing nurses. This was consistent with the findings of Bai et al. (2020) (r = 0.126). The data implies that the greater the cultural skill of a nurse, the greater their cultural competence will also be. According to the Process of Cultural Competence in Delivery of Healthcare Services model, cultural skill is defined as "the ability to collect relevant cultural data regarding the client's presenting problem and perform a culturally-based physical assessment." This involves learning and knowing how a client's physical, biological, and physiological aspects influence how the nurse conducts an accurate assessment and physical evaluation. Cultural skill is a vital variable in retrieving accurate information about culturally diverse clients and thus will ultimately lead to more culturally competent care (Campinha-Bacote, 2002).

Among all the predictors, age has shown to have the weakest relationship to the cultural competence of registered nurses (r = -0.2). Heitzler (2016), who researched the cultural competence of 132 obstetric and neonatal nurses in the United States of America, used a descriptive correlational design and revealed age to have a negative correlation to CCA (Cultural Competence Assessment) scores. This finding concludes that as nurses grow older, the lower the level of cultural competence (CCA scores) they have. The study of Halabi (2018) also found a negative correlation between age and overall cultural competence among nursing students. The overall competence among younger students was significantly higher *(M* = 45.27, *SD* = 7.29) than older students. Contradictory to this, a cross-sectional study performed on n =166 staff nurses in private hospitals in Bangkok, Thailand, indicated that there was a positive correlation between age and cultural competency (r = 0.214) (Bunjitpimol et al., 2015), meaning that cultural competency levels increased with older age.

Overall Effect Size of the Variables of Cultural Competence of Registered Nurses

Using the Hunter-Schmidt Random Effects Model, Table 2 shows the results of the meta-analysis performed on the variables that were researched to be predictors of cultural competence among registered nurses.

Table 2: Meta-analysis of Correlation Coefficient of Cultural Competence among RNs

(Hunter-Schmidt Random Effects Model)

N	Mean *r*	Lower *r*	Upper *r*	Chi 2	*p*-value	*df*	Interpretation
26	.241	-.066	0.548	138.84	0.000	25.00	Significant Small Correlation

Small Correlation (r = 0.1)   Medium correlation (r = 0.3) High Correlation (r = 0.5)

The results revealed that the mean of the overall effect size is 0.241, which is considered significant (p = .000) with a small correlation effect size. These results included the 19 significant predictors or variables of cultural competence among registered nurses in 6 research studies. The result implies that the variables such as cultural skill, cultural desire, cultural encounter, cultural knowledge, attitude, cultural awareness, diversity training, empowerment, length of service, empathy, marital status, the experience of cultural education, work experience, experience caring for diverse patients, age, working in a specialty area, work shift, responsibility, and confidence level will influence the cultural competence of registered nurses.

Publication Bias in the Meta-Analysis Review Conducted Considering the Combined Effect Sizes

The Rosenthal Fail-Safe N was used to report the publication bias of this study. Rosenthal (1979) suggested that in meta-analysis research, there is a need to compute how many missing studies would be needed to retrieve and incorporate in the analysis before the p-value becomes nonsignificant.

Table 3: Publication Bias

Rosenthal Fail-Safe N	*p*-value	Interpretation
3222	0.000	significant

Table 3 presents that for the meta-analysis review of cultural competence among Registered Nurses, the Fail-Safe N is 3222 with a *p*-value of 0.000 and is considered significant. This value implies that it would need 3222 studies with a mean risk of 1.0 added to the analysis before the cumulative effect would become statistically nonsignificant. This indicates that the research studies that were included in the meta-analysis review passed a certain standard, and rigors thus were published.

Moreover, the funnel plot showed a symmetrical distribution of the variance of the standard errors of the studies. This figure indicates that there was no publication bias in the meta-analysis review. Furthermore, it affirms the reliability of the results of the Rosenthal *Fail-Safe N* model.

Figure 2: Cultural Competence Funnel Plot
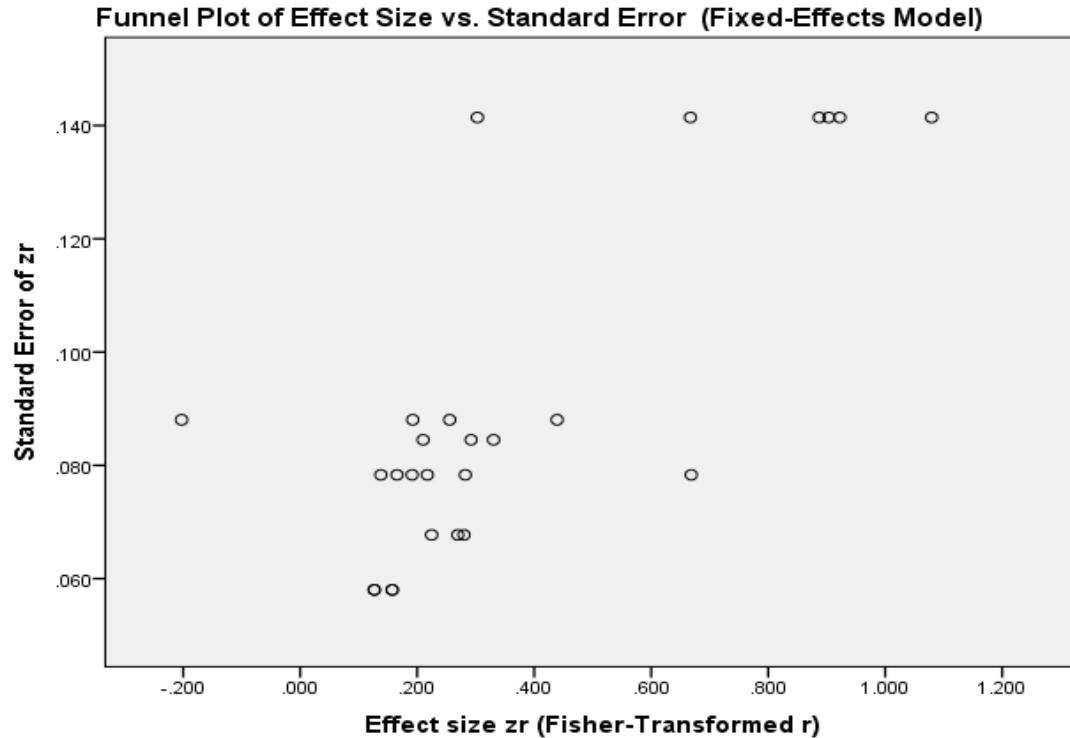
CONCLUSION

The meta-analysis confirmed 19 predictors of cultural competence of registered nurses with a significantly small correlation overall effect size. The higher the cultural skill, the higher is the cultural competence, and as nurse gets older, the cultural competence is lowered. The results of this meta-analysis study showed the influence and impact of the predictors towards the cultural competence of registered nurses and indicated the importance of a thorough understanding and an educational foundation of cultural care in providing quality and meaningful care towards culturally and ethnically diverse clients. The results also support and confirm Leininger's Culture Care theory. The assumption that the different cultural competence of nurses in caring for clients with a different culture is needed and important to provide culture-specific nursing care was affirmed. It is then recommended to include training and education that is focused on developing the cultural skills of nurses, that would promote improvement and development of intertwining cultural elements into nurses' judgments, decision-making, and actions.

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