

Research Article

Diversity Tools: The Relationship between Emotional Intelligence and Ethnicity in Nurses

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Abstract

There is ample empirical evidence that emotional intelligence (EI) abilities correlate with performance, retention and burn out prevention in both the general population and among health care providers. Although EI is a relatively new concept that has emerged over the past 20 years, hundreds of workforce research studies have provided evidence of its importance. Because of the importance of understanding emotional intelligence within a diverse nursing workforce, and concomitantly the importance of nurses' emotional intelligence ability, this study was undertaken to explore the relationship between ethnicity and emotional intelligence in nurses. The study was a quantitative, descriptive, retrospective secondary analysis of 5 studies carried out in Hawaii. All involved practicing nurses and nursing students. No significant differences were identified among the mean total EI score among the seven ethnic groups studied. When Caucasian participants were compared as a group with the remaining participants as a group, the understanding emotions, managing emotions, and strategic use of emotions sub-scores were significantly higher among the Caucasian participants. When Asians were compared with all other study participants as a group, the Asian participants' strategic EI scores were significantly lower. Lastly, when Caucasians as a group and Asians as a group were compared, the following Caucasian participants' scores were significantly higher: branch scores understanding emotions and managing emotions; area scores: strategic use of emotions. Findings from this study demonstrated clear sub score variation between ethnic groups included in this study. This variation could be explained by the widely reported concern for cultural bias in standardized testing, or could also be a reflection of variation in the perception and performance of emotional intelligence abilities among cultural groups.

INTRODUCTION

There is ample empirical evidence that emotional intelligence (EI) abilities correlate with performance, retention and burn out prevention in both the general population and among health care [1-4]. Although EI is a relatively new concept that has emerged over the past 20 years, hundreds of workforce research studies have provided evidence of its importance. An emerging body of research exists that support its significance within the nursing profession. Suggested as one means to operationally define and measure caring for nurses and other health care providers, emotional intelligence abilities may also provide the resources necessary to both make the workplace safer and culturally and ethnically diverse teams more effective.

Background

The evolution of intelligence theory: The IQ (Intelligent Quotient) test was originally developed in 1900 by French psychologist, Alfred Binet to predict the success of students [5].

Although Binet was successful in determining *which* students would do well academically, the question remains as to *why* some students succeed and others not. "Throughout the history of psychology, no question has been so persistent or so resistant to resolution as that of the relative roles of nature and nurture in causing individual and group differences in cognitive ability" [6]. This debate increased in intensity during World War I when the use of standardized intelligence tests was widespread. Data from IQ testing during this time demonstrated consistent IQ differences between ethnic groups [6]. Research has not conclusively determined whether this is explained by test bias or if cultural differences in the perception and interpretation of emotions explains these findings.

This question is complicated by changes over the past few decades in conceptual understanding of intelligence itself. Until recently, intelligence has been defined psychometrically and based primarily on the concept of general intelligence (*g*) [7,8]. Although Suzuki and Aronson [9] found that culture influences

psychological phenomena, including the biological indicators of intelligence, moving beyond *g* has proven to be a challenge. Howard Gardner and others have posited a different paradigm for intelligence, that of multiple intelligences. There has been significant development of alternatives to the paradigm of *g* intelligence. Alternative instruments have been developed. Despite this intelligence scores continue to vary when racial and ethnic groups are compared.

Emotional intelligence

Emotional intelligence is a relatively new concept that evolved over the past three decades in response to an evolving understanding of the limits to traditional ideas about intelligence. In this time, three main models of EI have been developed. One primary difference between the models is their operational definition of EI as ability, a personality trait, or both. For the purposes of study, the ability model of emotional intelligence was utilized. This model operationally defines EI with the following four abilities: 1) The ability to correctly identify emotions in one's self and others; 2) The ability to use emotions in the reasoning process; 3) The ability to understand emotions; and 4) The ability to manage emotions of one's self and in emotional situations. The premise of this model is that emotional intelligence abilities can be measured and improved. Several measurement instruments have been developed based on this model. The one with the highest levels of validity and reliability is the Mayer-Salovey-Caruso Emotional intelligence test (MSCEIT). This instrument is not a self-report instrument as many other EI instruments are, but rather an ability test that requires the performance of emotional tasks [10]. The MSCEIT has questions that reflect a person's understanding of both their own emotions and the emotions of those around them as well as both management and understanding of emotional situations. Factor analysis has confirmed the general validity of the four branch model, and evidence has been provided for test discriminate validity. The test-retest reliability for the instrument is in the high .80's, and split-half reliability is .91. Reliability of the sub scale scores range from .70 to the low .90's [11].

Literature review

Most EI research to date, including the body of nursing EI research, has included ethnicity as a co-variable. Yet, few have reported co-variation with EI and ethnicity. Several general EI studies in the general population report that African-Americans, Hispanics and Asians demonstrate lower EI scores compared to Caucasian populations [12,13]. Similarly, Asian populations demonstrated significantly lower scores in a sample of over 3000 people from four broad ethnic groups [14]. Some authors suggest that this is a result of test bias. Others have suggested that cultural differences may result in different perceptions about what constitutes emotionally intelligent behavior [15]. In the general population, although some research has identified variation in EI scores among ethnic groups, no studies have explored causes for this variation.

In the both the general literature, and in the nursing EI literature, measured EI ability has been correlated with important work force and work place outcomes such as level of job performance, health outcomes, reduced sick leave,

workplace moral, organizational commitment, positive conflict style, prosocial organizational behavior, team effectiveness and workplace safety [2,3,16-21]. Because of the importance of understanding emotional intelligence within a diverse nursing workforce, and concomitantly the importance of nurses' emotional intelligence ability, this study was undertaken to explore the relationship between ethnicity and emotional intelligence in nurses.

Methodology

Design: The study was a quantitative, descriptive, retrospective secondary analysis of five EI nursing studies, with a total n of 444. All involved practicing nurses and nursing students. Nursing students included in the study came from two local universities and had similar curricula. All studies received approval from the institutional review boards at the facilities in which they took place. In all the studies, the MSCEIT EI instrument was utilized as a part of the data collection for the study. All participants in the studies completed informed consent. No personal identifiers were collected for any of the studies, only study code names were used. All data collection took place electronically via study web sites and/or the MSCEIT electronic test site. Study participants ranged in age from 17 to 71 years. A total of 380 (86%) were females and 64 (14%) males. The participants represented a wide range of educational preparation, ranging from undergraduate nursing students to doctoral prepared nurses. A wide range of ethnicities were represented in the studies. For the purposes of this study, ethnicity was grouped into following ethnic groups: Caucasian (141 or 32%), Hispanic (12 or 2.5 %), Alaskan Native (1 or <1 %), Asian (257 or 58%), Pacific Islander (22 or 5%), African American (12 or 2.4%).

Instrumentation

MSCEIT score structure: The MSCEIT instrument reports a total emotional intelligence score, two area scores (Experiential EI and Strategic EI), four branch scores that reflect the operational definition of EI (Identifying emotions, Using emotions to reason, Understanding emotions, and Managing emotions), as well as a number of task scores. Since the validity and reliability scores are lower for the task scores than the other 7 EI scores, they were not included in the study data. For the purposes of this study, the following seven scores were utilized: total EI score, four branch scores, and two composite Area scores each representing two

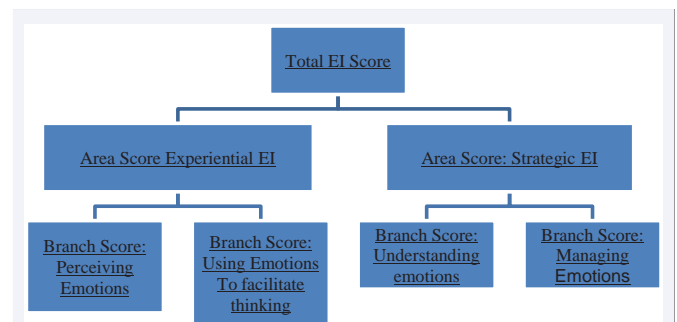


Figure 1 Score structure for the Mayer-Salovey-Caruso Emotional Intelligence Test.

branch scores. Area score Experiential EI reflects branch scores Identifying emotions and Using emotions to reason, and Area score Strategic EI is made up of branch scores Understanding emotions and Managing emotions. The scoring structure is illustrated in Figure (1). There are several scoring ranges that can be used for the MSCEIT. For the purposes of this study the simplest was utilized, which identifies the following three ranges: below average (less than 90), average range (90-109), and above average (110 or above).

Research questions

Research Question #1: What were the mean scores across the seven scores examined in the study? Did they significantly differ among the various ethnic groups?

Research Question #2: What were the scores for the sample across the continuum from below average, average and above average scores for all the area and branch EI scores? Did the pattern distribution by percentages differ significantly among the ethnic groups?

Research Question #3: What did the highest and lowest scores reflect about areas of greatest strength and weakness for study participants? Were there differences among the ethnic groups?

Research Question #4: Were there significant differences in any of the seven EI scores among the ethnic groups in the study?

Research Question #5: Were there any demographic variables that explained differences in any of the emotional intelligence scores?

Data analysis plan

The data analysis plan included both descriptive and inferential statistics. For the descriptive analysis, in addition to mean and ranges for each score, patterns of scoring across the continuum from below average, average and above average scoring was planned. In addition, analysis of patterns for high and low scoring was planned to identify patterns of skill strength and weakness. Inferential statistics were planned to explore differences in the EI scores of participants in ethnic groups. Regression analysis was chosen to identify factors that might influence such differences. The specific plan for statistical analysis of each research question was as follows:

Research Question #1: Mean scores among the seven EI scores. Descriptive statistics and analysis of means were planned for this research question.

Research Questions #2 and #3: Below average, average, and above average scores: It was anticipated that frequency distribution and percentage reporting would be utilized for analysis of these questions.

Research Question #4: Inferential statistics including two tailed t-tests, ANOVA and a Turkey HSD post hoc analysis were planned for analysis of this question.

Research Question #5: Correlation and regression were planned for analysis of this question.

Findings: descriptive analysis

Research Question #1: What were the mean scores across the seven scores reported in the study? Did they significantly differ among the various ethnic groups? All seven participant EI scores examined in the study (Total EI, Area scores Experiential EI and Strategic EI, and Branch scores Identifying emotions, Using emotions to reason, Understanding emotions and Managing emotions) fell within the average range (with the exception of Ethnicity 4 (Alaskan Natives), a group that had only one person representing the group). No significant differences were identified among the remaining ethnic groups.

Research Question #2: What were the scores for the sample across the continuum from below average, average and above average scores for all the area and branch EI scores? Did the pattern distribution by percentages differ significantly among the ethnic groups? A descriptive analysis was done to examine the distribution of scores across the continuum from below average (<90), average (90-109) and above average (>109) for all ethnicities as a group (See Table1). For the total EI score, 26% (114) of participant scores were in the below average range, 55% (245) were in the average range and 19% (85) were in the above average range. A similar analysis of the area scores (strategic EI and experiential EI) revealed that of these scores, more participants had experiential scores below average than those who had strategic EI scores below average (70% vs 28%). More participants had experiential EI scores that were above average (25%) than those who had strategic EI scores above average (20%). This also reflected a high percentage (52%) of participants whose score fell in the average range for strategic EI but a very small percentage (5%) for participants whose score fell in the average range for Experiential EI.

A similar analysis of the branch scores across all ethnicities revealed that the branch score with the fewest participant scores below average was managing emotions (63, or 14%). The branch with the highest level of below average scores was identifying emotions (127, or 29%). Branch scores identifying emotions and using emotions to reason demonstrated the highest percentage of above average scores, approximately 25% of participants (111 and 112 respectively). Branch score understanding emotions the lowest percentage (11%). Branch score managing emotions had the highest percentage of average scores (330 or 74%) (See Table 1). There appeared to be no correlation with ethnicity among these findings.

Research Question #3: What did the highest and lowest scores reflect about areas of greatest strength and weakness for study participants? Were there differences among the ethnic groups? A descriptive analysis was done to determine scores that reflected areas of skill strength and weakness (highest and lowest scores). For area scores, 60% of participants demonstrated experiential EI as their highest area score, and 33% had strategic EI as their highest score. There did not appear to be any correlation with ethnicity for this finding.

Research Question #4: Were there significant differences in any of the seven EI scores among the ethnic groups in the study? Caucasian and Alaskan Native participant scores demonstrated significantly differences. Caucasian participants' area score, Strategic use of emotions was higher than the Alaska native group ($f=8.037, p=.009$). A similar finding was demonstrated for

Table 1: Scores continuum across below average, average and above average scores: All ethnicities (Caucasian, Hispanic, Alaskan Native, Asian, Pacific Islander and African American)

Score	Below average	Average	Above average
Total EI Score	26% (116)	55% (245)	19% (85)
Area Score Experiential EI	70% (312)	5% (22)	25% (112)
Area Score Strategic EI	28% (125)	52% (215)	20% (89)
Branch Score Identifying Emotions	29% (127)	46% (208)	25% (112)
Branch Score Using emotions	27%(122)	48% (212)	25% (112)
Branch Score Understanding emotions	23% (102)	67% (297)	10% (47)
Branch Score Managing emotions	14% (63)	74% (330)	12% (53)

Table 2: Correlation between Age and EI Scores all ethnicities (Caucasian, Hispanic, Alaskan Native, Asian, Pacific Islander and African American)

	n size	p value	r score
Total EI Score	444	< .05	.028
Experimental EI	444	< .05	.001
Strategic EI	444	< .05	.076
Identifying emotions	444	< .05	-.012
Using emotions to reason	444	< .05	.049
Understanding emotions	444	< .05	.014
Managing emotions	444	< .05	.107*

*Correlation is significant at the .05 level (2-tailed).

Note: SPSS version 19 software was used to determine correlation. Variables were, (a) Age & Total; (b) Age & Strat; (c) Age & Experience; (d) Age & Manage; (e) Age & Understand; (f) Age & Use; and (g) Age & Identify.

branch score understanding emotions ($f=7.846$, $p= .002$). Both these findings were significant at the $p<.05$ level See Table 2.

When Caucasian participants were compared as a group with the remaining participants as a group, the understanding emotions, managing emotions, and strategic use of emotions scores were significantly higher among the Caucasian participants. When Asians were compared with all other study participants as a group, the Asian participants' strategic EI scores were significantly lower. Lastly, when Caucasians as a group and Asians as a group were compared, the following Caucasian participants' scores were significantly higher: branch scores understanding emotions and managing emotions; area scores: strategic use of emotions.

Research Question #5: Were there any demographic variables that correlated with any of the emotional intelligence scores? None of the demographic variables included in the study correlated with any of the seven EI scores except for branch score managing emotions, which correlated with age ($p<.05$, $r=.107$). No relationship between gender and any EI score either in the whole participant group or any ethnic sub group was noted (See Table 3).

DISCUSSION

Findings that reflected a relatively high percentage of scores in all score categories that were in the below average

range have been reported elsewhere [3]. The branch score, identifying emotions, was the lowest skill score in a significant percentage of the population explored in this study. This score is arguably the ability on which all others depend, so this finding is important. It is also of interest that the area scores were significantly imbalanced. Experiential EI scores were the highest score for 60% of the population, which may reflect a skill imbalance in this area. One explanation for this may be the lack of emotional intelligence focused education in nursing school. The demonstrated correlation of branch score managing emotions with age has been demonstrated in the general EI literature, although not consistently for nurses in clinical practice. The lack of gender correlation with any EI score has not been consistently demonstrated in the general EI literature but is consistent with some findings in the nursing EI literature [1].

Findings from this study demonstrated clear score variation between ethnic groups included in this study. This variation could be explained by the widely reported concern for cultural bias in standardized testing, or could also be a reflection of variation in the perception and performance of emotional intelligence abilities among ethnic and cultural groups.

The United States' workforce is growing ever more diverse. This is reflected in the increasing diversity of the health care workforce. The effectiveness of health care workplace teams will depend in part on their ability to work effectively as a diverse

Table 3: One-Way Analysis of Variance – Comparing EI Scores Among Ethnicities (Caucasian, Hispanic, Alaskan Native, Asian, Pacific Islander and African American).

		Sum of Squares	df	Mean Square	F	Sig.
ID Emotions	Between all Groups	1388.022	5	277.604	.992	.422
	Within all Groups	122053.981	436	279.940		
	Total	123442.002	441			
Use Emotions	Between all Groups	638.630	5	127.726	.622	.683
	Within all Groups	89533.273	436	205.352		
	Total	90171.903	441			
Understand Emotions	Between all Groups	1528.676	5	305.735	3.114	.009*
	Within all Groups	42802.419	436	98.171		
	Total	44331.095	441			
Manage Emotions	Between all Groups	955.960	5	191.192	2.116	.062
	Within all Groups	39391.482	436	90.347		
	Total	40347.441	441			
Experiential Use of EI	Between all Groups	977.401	5	195.480	.741	.593
	Within all Groups	115005.679	436	263.774		
	Total	115983.079	441			
Strategic Use of EI	Between all Groups	1740.990	5	348.198	3.948	.002*
	Within all Groups	38454.895	436	88.199		
	Total	40195.885	441			
Total EI Ability Score	Between all Groups	869.738	5	173.948	1.102	.359
	Within all Groups	68847.676	436	157.908		
	Total	69717.414	441			

*Significant difference in mean scores was identified within the group at the .05 level.

Turkey HSD post-hoc test identified a significant mean difference of 8.037 in the Understand Emotions variable between Caucasian and Alaskan Native. A significant mean difference of 7.846 in the Strategic Use of EI variable was also identified between Caucasian and Alaskan Native.

team. For this reason and since EI abilities have been suggested as important skills set for team effectiveness, the findings of this study suggest the importance of further research about both EI instrumentation among various cultural groups, and more exploration of the role of EI ability in diverse teams. Equally, understanding factors related to emotional intelligence and ethnicity may improve nurse caring ability within ethnically diverse environments. While the instrumentation question is outstanding, the possibility that EI abilities are both formed and interpreted differently among cultural groups should be further explored in international nurse collaborations. Further research is needed in this area.

Limitations and suggestions for future research

This study was limited by participants who lived in the United States. There were significantly more women than men represented in the study. African American and Hispanic participants were not representative of US demographics. Future research should include these groups and also include comparison of findings from other EI instruments, to assess test bias, and further explore the relationship of culture specifically in relation to EI ability.

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