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**Works Cited**

Baloğlu, Mustafa, Amir Abbasi, and William G. Masten. "A cross-cultural comparison of anxiety among college students." *College Student Journal* 41.4, Pt A (2007): 977-984. *PsycINFO*. EBSCO. Web. 21 Apr. 2011.

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**A CROSS-CULTURAL COMPARISON OF ANXIETY AMONG COLLEGE STUDENTS**

A number of studies have continued to investigate cross-cultural differences in anxiety. However, the cross-national research on anxiety is still far less advanced than other psychological constructs such as schizophrenia or depression. Thus, the purpose of the present study was to compare and contrast the levels of anxiety experienced by American, Turkish, Mexican, and Philippines college students as measured by the State-Trait Anxiety Inventory. A total of 1709 college students participated in the present study. Significant differences were found in terms of the levels of state and trait anxiety. On both state and trait anxiety, Philippines scored the highest followed by Turkish, Mexican, and American students. These findings also indicate negative correlations between age and anxiety levels, with the younger participants having lower anxiety levels.

Systematic cross-cultural studies on psychopathology began after the World War II with a support from the World Health Organization (Good & Kleinman, 1985). Researchers have conducted a number of cross-cultural studies on psychiatric disorders in non-western societies (e.g., Chaturvedi, 1993; Weiser, Endler & Parker, 1991). Cross-cultural research on anxiety in particular is most closely associated with the works of Cattell and Spielberger (e.g., Cattell & Scheier, 1961; Spielberger, 1958, 1962, 1966, 1972, 1976).

In particular, a number of cross-cultural studies have continued to investigate cross-cultural differences in anxiety (e.g., Boehnke, Frindte, Reddy, & Singhal, 1993; El-Zanhar & Hocevar, 1991; Ginter, Glanser, & Richmond, 1994; Good & Kleinman 1985; Klonoff & Landrine, 1994; Magansson & Stattin, 1978; Mumford, 1993; Olah, 1995; Spielberger & Diaz-Guerrero, 1976; Spielberger & Sharma, 1976; Sharma, Dang & Spielberger, 1986). However, the cross-national literature on anxiety is still far less advanced than other psychological constructs such as schizophrenia or depression (Good & Kleinman, 1985).

A large number of cross-cultural anxiety studies have used the State-Trait Anxiety Inventory (STAI; Spielberger, Gorsuch, Lushene, Vagg, & Jacobs, 1983) in measuring and comparing anxiety levels. For example, Spielberger, Sharma and Singh (1973) administered the A-State scale of the Hindu STAI to a sample of 92 graduate students in India and the results showed there was a greater increase in the STAI A-State scores for Indian students compared to Americans.

In a similar study, Sharma, Parnian, and Spielberger (1983) compared the test anxiety levels of Iranian (n = 160) and Indian (n = 160) secondary school and college students. The results indicated that the Iranian students had higher levels of test anxiety than their Indian counterparts. Tricultural differences in the test anxiety levels among the Iranian, Indian and U.S. student groups were interpreted as some eastern students showing greater anxiety levels.

Le Compte and Öner (1977) compared Turkish (n = 499), American (n = 1800), Puerto Rican bilingual (n = 481) and Hindu (n = 160) students' anxiety levels measured by the STAI. The order of the mean A-Trait scores from low to high was Puerto Rican, American, Hindu, and Turkish students. The order of the mean A-state scores from low to high was Hindu, American and

Turkish/Puerto Rican.

Using the Children's Manifest Anxiety Scale (CMAS), Iwawaki, Sumida, and Okuno (1967) found that, although adult Japanese have a higher level of general anxiety than adult Americans, Japanese nine-year-olds have significantly lower levels of anxiety than nine-year-old French and Americans.

A cross-cultural study of sex differences in anxiety (Ben-Zur & Zeidner, 1988) using the Hebrew version of Spielberger's State-Trait Personality Inventory (STPI/HB) with 223 female and 151 male students indicated similar scores to the norms available for American students. In two other studies with the STAI, Anglos and Mexican-Americans were given the English STAI, whereas Puerto Ricans were given the Spanish version of the STAI. The results indicated that both the state and trait anxiety levels from low to high were Mexican-Americans, Anglos, and Puerto Rican (Sharma, 1977).

In another study of college students, Cattell and Scheier (1961) compared six nations: the United States, Britain, France, Italy, Poland and India. The results showed the following order from low to high in anxiety: the United States, Britain, Italy, France, India, and Poland.

Even though the evidence and results of psychophysiological and psychological studies on emotion and pharmacological research on cross-cultural settings indicate that anxiety disorders are universal, the experience and form of expression in anxiety may vary in quite significant ways from one culture to another (Good & Kleinman, 1985). While current literature suggests that culture plays a significant role in how individuals experience and are affected by anxiety, cross-cultural studies that investigate similarities and differences in anxiety across different nations is lacking. Moreover, the full range of such variations have not yet been studied or identified. Therefore, the purpose of the present study was to compare and contrast the levels of anxiety experienced by American, Turkish, Mexican, and Philippines college students as measured by the STAI.

Method

Participants

A total of 1709 college students from four different countries participated in the present study. Of these students, 672 were Americans (39.3%), 442 were Turkish (25.9%), 294 were Philippines (17.2%), and 301 were Mexican (17.6%). In terms of gender, 1090 students were females (64.2%) and 607 were males (35.8%). Twelve students did not indicate their gender. Students' ages ranged from 16 to 63 with a mean of 20.69 years (SD = 5.72). Most of the participants were single (68.6%). Students' grade point averages ranged from 1 to 4 with a mean of 2.10 (SD = .76). All participants indicated that they were proficient in English.

Instrument

The State-trait Anxiety Inventory (STAI; Spielberger, et al., 1983) (Form Y1, State and Form Y-2, Trait) was used in the present study to collect data. The STAI was developed to measure transitory-emotional and relatively stable anxiety reactions (Spielberger, Gorsuch, & Lushene, 1970). Of the 40 items, 20 items measure feelings of apprehension, tension, nervousness, and worry about the current situation (A-State). A 4-point Likert scale. ranging from "Not At All ( 1)" to "Very Much So ( 4)," asks respondents to rate the degree to which each item indicates his/her current feelings, where higher scores indicate higher levels of anxiety. The other 20 items, A-Trait scale, assess how the respondents feel in general, using a 4-point Likert scale, ranging from "Almost Never ( 1)" to "Almost Always ( 4)."

The STAI has been translated into many languages such as Spanish, French, Italian, Turkish, Danish, German, Greek. Hebrew, Hungarian, Japanese and the validity and reliability of the translated scale have been studied, This study used the English version of the inventory for two reasons: 1) The STAI's validity and reliability has been established in all the countries of participants in this study (Hishinuma, Miyamoto, Nishimura, Nahulu, Andrade, Makini, 2000; Novy, Nelson, Goodwin, Robert, 1993; LeCompte & Öner, 1975; Spielberger, 1980, 1983) and, 2) because the participants were proficient in the use of English as a second language. Finally, internal consistency coefficients of the state and trait anxiety scores were .87 respectably.

Procedure

Students were asked whether they would want to participate in the study after a brief explanation about the nature of the study had been given. Those who were willing to participate responded to a brief demographic questionnaire and the STAI. In order to ensure confidentiality, participants were asked to write no identifying information on the packets. Upon completion, the packets were collected and the participants were debriefed. Debriefing included a statement of appreciation for participation and a brief description of the study. Data were screened for the accuracy and for the assumptions of parametric statistics. Normality, homogeneity of variance, and linearity assumptions were tested.

Results

Relationships between state-trait anxiety and demographic variables such as age and GPA were investigated. There was a significant relationship between both state ($r = -.20$) and trait anxiety ($r = -.22$) and age ($p < .01$). However, no significant relationship was found between neither state anxiety nor trait anxiety and GPA. Regardless of the country of origin, gender differences on state and trait anxiety were

also investigated. On state anxiety, female students (M = 43.21, SD = 13.44) scored significantly higher than male students (M = 40.65, SD = 11.46, p <.001). Similarly, on trait anxiety, female students (M = 44.11, SD = 10.29) scored significantly higher than male students (M = 41.86, SD = 9.26, p <.001). However, when the country of origin was taken into account, Turkish and Mexican women scored significantly higher than men in state anxiety. There was no significant difference between men and women on state anxiety in American and Philippines students (Table 1). On trait anxiety, American, Turkish, and Mexican women scored significantly higher than men but Philippines men and women did not differ significantly. Means and standard deviations of the state and trait anxiety scores for students from four different countries are presented in Table 1.

In order to investigate multivariate anxiety differences across four different counties, one-way between-subjects multivariate analysis of variance (MANOVA) was used. In the present study, state and trait anxiety scores were also significantly related in all groups. A non-orthogonal design (i.e., unequal cell size) was used. SPSS MANOVA (SPSS Inc., 2000) was used to adjust the non-orthogonality problem before the analyses. An investigation of the variances for each cell revealed that cells with larger sample sizes produced larger variances. In such situations, the null hypothesis can still be rejected with confidence (Tabachnick & Fidell, 2001). In addition, an overall test of the homogeneity of regression and tests for the homogeneity of regression for MANCOVA stepdown analyses showed that the homogeneity of the regression assumption was met for all the dependent variables (p > .09).

A significant main effect of country of origin was found (λ = .81, p < .0005); however, the association between the covariate and the combined dependent variables was small ($n^2$ = .09). The results of dependent variable-covariate stepdown analyses showed that students from four different countries differed significantly both on state and trait anxiety levels.

In terms of state anxiety, Turkish students ($X_{(adj)}$= 47.68, SE = .56) scored significantly higher than both American ($X_{(adj)}$ = 36.69, SE = .45) and Mexican students ($X_{(adj)}$ = 41.48, SE = .68). Philippine students also scored significantly higher on state anxiety ($X_{(adj)}$ = 48.14, SE = .69) than American and Mexican students. Similarly, Mexican students scored significantly higher than American students on state anxiety.

In trait anxiety, Philippine students ($X_{(adj)}$ = 48.63, SE = .55) scored significantly higher than American ($X_{(adj)}$ = 39.48, SE = .36), Turkish ($X_{(adj)}$ = 45.52, SE = .45), and Mexican students ($X_{(adj)}$ = 43.50, SE = .54). Similarly, Turkish students ($X_{(adj)}$ = 48.14, SE = .69) scored significantly higher than both American and Mexican students on trait anxiety. Lastly, Mexican students also scored significantly higher than American students on trait anxiety.

## Discussion

This study gained insight into how students from different countries experienced anxiety. This investigation measured interactions among and between anxiety and the independent variable of country of origin. It was assumed that students in different countries experience different levels of anxiety. Results indicated high correlations between A-State and A-Trait and significant differences anxiety in gender. A literature review suggested the possibility of significant differences among and between respective anxiety levels of students from different countries. When it comes to country of origin, significant differences were found in terms of the levels of state and trait anxiety. These findings

also indicate negative correlations between age and anxiety levels, with the younger participants having lower anxiety levels.

According to Good and Kleinman (1985), cross-cultural studies provide an opportunity to determine if research findings in Western countries are universal. They believe that the foundation and essential structure is the same, the phenomenology of anxiety--which constitutes the social reality, prevalence, and form of expression--may vary in quite significant ways from one culture to another. The results of the present study support their conclusion.

Results of previous reliability studies indicated that the State-Trait Anxiety Inventory (STAI) is a reliable instrument for the current research. Moreover, results indicated high correlation between the two forms, State and Trait. The results of this study agree with the previous findings that state and trait anxiety are related.

In their cross-cultural study, Ben-Zur and Zeidner (1988) reported higher anxiety levels among females than males and concluded that females are more vulnerable to stress and anxiety, regardless of cultural differences. Also, given exposure to similar stressors, women appear more prone than men to manifest stress-related symptoms. This study also found that females experienced significantly higher anxiety levels compared to men. However, when different country of origins was investigated, Turkish and Mexican females were significantly higher on both state and trait anxiety compared to men. American women scored significantly higher than American men only on trait anxiety and Philippine students did not differ at all.

This study may help cross-cultural counseling practitioners to understand that, regardless of differences among human beings, feelings of anxiety seem universal. However, for some reasons, the intensity of anxious feelings can differ from one group to another. It seems important for researchers to heighten their sensitivity to these differences as a means to help different groups of students appropriately.

Although it is necessary, cross-cultural research is among the more difficult types of research to execute. The lack of quantity of cross-cultural research, lack of norms for specific cultural groups, and unfamiliarity of investigators with the respective cultural background of research subjects are among factors which contribute to this difficulty. Additionally, data collection and evaluation can be challenging when one who is not familiar with subjects' cultural frame of reference tries to evaluate and interpret the findings.

The use of the English version of the STAI may have been a contributing factor, as well. Although this study administered the inventory only to students who had sufficient English proficiency levels, results might have been different if the instruments had been administered in participants' own languages. However, this study confirms that anxiety disorders are universal and generally speaking, regardless of where students come from, they may experience some level of anxiety. Although this study did not investigate how different cultural groups manifest the symptoms of anxiety disorders, the examination of literature suggests that different individuals, as well as different cultural groups, manifest anxiety symptoms differently. Those working with different cultural groups need to be alert to cultural differences and to be able to identify symptoms that culturally different students experience.

Social science research is problematic in non-Western countries. Doing research is culturally a Western phenomenon. Generally speaking, non-Western social scientists are not as involved in research as their Western colleagues. This difference is due in part to the relative lack of academic freedom experience for non-Western cultures. Moreover, relative lack of a comprehensive body of literature in cross-cultural research makes investigators pioneers in their respective areas of study. Thus, cross-cultural researchers have the disadvantage of not having the context of historical findings to build on.

**Table 1. Means and Standard Deviations of the STAI Scores for Students from Four Countries**

Legend for Chart:

A - Country American (n = 672) M
B - Country American (n = 672) SD
C - Country Turkish (n = 442) M
D - Country Turkish (n = 442) SD
E - Country Mexican (n = 301) M
F - Country Mexican (n = 301) SD
G - Country Philippine (n = 294) M
H - Country Philippine (n = 294) SD

| | A | B | C | D |
|---|---|---|---|---|
| | E | F | G | H |
| State Anxiety | | | | |
| | 36.69 | 13.13 | 47.68 | 11.41 |
| | 41.48 | 10.79 | 48.14 | 9.87 |
| Trait Anxiety | | | | |
| | 39.48 | 10.94 | 45.52 | 8.38 |
| | 43.50 | 8.68 | 48.63 | 7.38 |
| r (state and trait anxiety) | | | | |
| | r =.80(*) | r =.80(*) | r =.69(*) | r =.69(*) |
| | r =.73(*) | r =.73(*) | r =.69(*) | r =.69(*) |

(*) significant at p < .001.

**Table 2. Test of Country Effects**

| Effect | Dependent Variables | StepdownF | df |
|---|---|---|---|
| Country | State Anxiety | 106.26(*) | 3/1705 |

| | | |
|---|---|---|
| Trait Anxiety | 14.82(*) | 3/1704 |

(1) Because dependent variables were correlated univariates were not evaluated. (*) p <.01.

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