

Exploring the Relationship among Loneliness, Self-esteem, Self-efficacy and Gender in United Arab Emirates College Students

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Abstract

The objective of the present study was to investigate the relationship between loneliness, self-esteem, self-efficacy, and gender among United Arab Emirates college students. The respondents were 495 college students from Al Ain University of Science and Technology. The sample was stratified by sex. Among the respondents, 59% were female students and 41% were male students. The mean age of the sample was 21.8 years ranging from 18 to 36. Loneliness was measured by Revised UCLA Loneliness Scale (Version 3) (Russell, 1996), while self-esteem was measured by Rosenberg Self-esteem Scale (Rosenberg, 1965). General Self-efficacy Scale (Jerusalem and Schwarzer, 1979) measured self-efficacy. The findings of the study showed that females reported higher loneliness compared to their males counterparts. Lower self-esteem and lower self-efficacy were associated with high levels of loneliness. However, self-esteem emerged as the most significant predictor of loneliness accounting for 22.9% of the variance, self-efficacy and gender each accounted for an additional 6.5% of the variance in loneliness. All three predictors explained 29.4% ($R = .543$) of total variance. Loneliness has been associated with various negative emotions and behaviors. Therefore, it is of great value to explore the predictors of loneliness and find effective ways to reduce lonely feelings among college students.

Keywords: Loneliness, self-esteem, self-efficacy, college students, UAE.

Introduction

Loneliness is a distressing, painful experience that humans want to avoid. Most people are probably going to have a significant experience of loneliness some time

in their lives (Rokach & Brock, 1997). Oshagan and Allen (1992) reported that the prevalence of loneliness in the general population has been estimated to range from 15% to 28%. Unfortunately, researchers emphasized that loneliness is a more prevalent and serious problem among college students. Moreover, many students have reported experiencing loneliness (Wiseman, Guttfreund, & Lurie, 1995). Knox, Vail-Smith and Zusman (2007) found that 25.9% of college male students and 16.7% of college female students had severe loneliness feelings. In the same vein, McWhirter (1997) reported that in the US, approximately 30% of college students experienced loneliness and at least 6% considered it a major problem. In a more recent study, Özdemir and Tuncay (2008) found in their study on Turkish college students that 60.2% of the participants experienced loneliness. The findings also showed high means of loneliness (45.49).

The United Arab Emirate's society is a very conservative with strong family ties. Religion and culture play a major role in the formation of their world views. A significant number of college students are married while at the college. Young adults are expected to have children within the first two years. These practices results of adhering to cultural and societal values. Also, this may create stress, especially for females, as young women attempt to balance childcare, college, domestic, familial, and marital duties simultaneously. Ghubash, Daradkeh, Al-Muzafari, Al-Manssori, and Abou-Saleh (2001) concluded that the rapid socio-cultural changes in the Emirates society are demonstrated on increase in chronic illness like diabetes and heart diseases, as well as by increase in mental health disorders. According to the findings of few studies in this area in the UAE, mental health disorders may be highly prevalent among college students and adults. Abou-Saleh, Ghubash, and Daradkeh (2001) conducted a study on a sample included 1394 adults systematically sampled from Al Ain community in the UAE. They used the International Classification of Diseases (ICD-10, and found that the prevalence of mental disorder rate was 8.2% and the rate of mental distress as measured by the new screening instrument was 18.9% . Mood disorders and anxiety (neurotic) disorders were more common in women and alcohol and substance use disorders were exclusively confined to men. Female sex, young age, quality of marital relationship, life events over past year, chronic life difficulties, physical illness, family history of psychiatric disorders and past history of psychiatric treatment were found to be significantly associated with ICD-10 psychiatric disorder. Multivariate analysis revealed that age, sex, exposure to chronic difficulties and past history of psychiatric treatment were the most significant predictors of ICD-10 psychiatric disorders, and exposure to chronic difficulties, past history of psychiatric treatment and educational attainment were the significant predictors of lifetime ever and current mental distress.

In a cross-sectional study conducted in an international Medical College at the city of Dubai in the UAE, the participants were 103 pre-clinical medical students. The major findings of the study were that 23.3% of the sample was in moderate depression range, and none of the students had severe depression (Ahmadi, Kamel, Ahmed, Bayoumi, & Moneenum, 2008).

It is not surprising that college students develop feelings of loneliness because the university life is a transitional period from high school to college and from being adolescent to being an adult. The new environment demands abandoning the old social network and exerting a great effort to seek and build a new close and social relationship with others, which may lead to the experience of loneliness.

Loneliness feelings

Loneliness has been described as negative feelings that exist when there is a discrepancy between what one wants in terms of interpersonal affection and intimacy and what one, in fact, has (Lauder, Siobhan, & Kerry, 2004). Blazer (2002) reported that the discrepancy can be long standing or can result from changes in the individual's social relations or changes in the person's social needs or desires. Moreover, Peplua and Perlman (1982) described loneliness as a subjectively experienced aversive emotional state that is related to the perception of unfulfilled intimate and social needs. Furthermore, loneliness involves the cognitive awareness of a deficiency in one's social and personal relationships, and leads to affective reactions of sadness, emptiness, or longing (Asher & Paquentt, 2003). This can occur not only when people lack ongoing relationships with others, but even when they have meaningful relationships that take negative turns. For example, loneliness can be a response to separations, such as when a friend is unavailable to play with or moves away leaving behind affectionately stranded friends (Asher & Paquentt, 2003). Moreover, Peplua and Perlman (1982) described loneliness as a subjectively experienced aversive emotional state that is related to the perception of unfulfilled intimate and social needs. Rokach (2011) proposed three distinguishing characteristics of all loneliness experiences: Loneliness is a universal phenomenon, a subjective experience, and a multifaceted experience. It is always very painful, severely distressing, and individualistic.

Several studies have explored the causes of loneliness (Peplua & Perlman, 1982). One set of the causes lies in cultural and situational environments such as changes in social networks, and changes in personal relationships especially loss of significant relationships. Transfer is another cause of loneliness which may involve separation

from most of the person's social networks. The other set due to personality traits like lack of social skills, fear of rejection, and anxiety (Peplua & Perlman, 1982).

Self-esteem and loneliness

Self-esteem has been regarded as an essential component of mental health (Taylor & Brown, 1988). Self-esteem is an important factor for college students, it's related to loneliness, and contributes to interpreting student's behavior, when a student feels lonely (Hobfoll & London, 1986). According to Bandura (1997), self-esteem can be defined as the positivity of the person's evaluation of the self. Kohn (1994) reported that self esteem is the personal judgment of worthiness that is expressed in the attitude the person holds toward himself. It is how the individual evaluates himself and his characteristics.

Various research indicated that self-esteem was negatively correlated with loneliness (e.g., Davis, Hansen, Edson, & Ziegler, 1992; Lasgaard & Elklit, 2009; Mahon, Yarcheski, Yarcheski, Cannella, & Hanks, 2006; McWhirter, 1997; Ouellet & Joshi, 1986; Roscoe & Skomski, 1989). In their study, Nurmi, Toivonen, Salmela-Aro, and Eronen (1997) investigated self-esteem and the attribution strategies in beginning a university freshman. They found that self-esteem was significantly predictive of loneliness following the college adjustment period. This finding suggested that the relationship between self-esteem and loneliness is stable over time. Mahon et al. (2006), reported in their meta-analytic that 27 studies investigated the relationship between loneliness and self-esteem, the r effect sizes for the relationship between loneliness and self-esteem were in the range of a high medium effect size with outliers ($r = -.42$ to $.45$) and when outliers were removed ($r = -.48$ to $-.50$). When low self-esteem is formed, it affects all aspects of an individual's life especially the relationship with others. Individuals with low self-esteem usually avoid social settings and isolate themselves resulting in having the feelings of loneliness from their lack of confidence. Ouellet and Joshi (1986) reported correlation of $r = -.72$ between loneliness and self-esteem, indicating that higher levels of self-esteem were related to lower levels of loneliness. Other studies exploring this relationship have yielded slightly weaker correlation between self-esteem and loneliness, with values of approximately $r = -.50$ (Haines, Scalise, & Ginter, 1993).

Self-efficacy and loneliness

To understand the variables that contribute to or influence the experience of loneliness among college students, college counselors also need to investigate the role of self-efficacy. Self-efficacy was introduced by Bandura (1977) and represents one aspect of his social-cognitive theory. General self-efficacy (GSE) is the belief in

one's competence to tackle novel tasks and to cope with adversity in wide range of stressful or challenging encounters, as opposed to specific self-efficacy, which is constrained to a particular task at hand (Luszczynska, Gutiérrez-Dona, & Schwarzer, 2005). Self-efficacy makes a difference to as how people feel, think, and act. High self-efficacy allows individuals to choose challenging settings and explore their environment or create new ones. While Bandura (1997) reported that a low self-efficacy is associated with a low self-esteem, Heslin and Klehe (2006) noted that self-efficacy is related to the experience of stress and work burnout. Specifically, low self-efficacy can lead to a sense of helplessness and hopelessness about one's capability of self-esteem. Recent research findings show that GSE negatively associated with loneliness (e.g., Leganger, Kraft, & Roysamb, 2000; Luszczynska et al., 2005).

A study conducted by Dussault and Deaudelin (2001) found a negative correlation between self-efficacy and loneliness ($r = -.25$). This finding suggests that loneliness is more likely exists in people who have lower self-efficacy. As a further support for this finding, the study findings of Cheng and Furnham (2002) revealed moderate, negative correlations between general self-efficacy and both the intimate others and social others subscales of the UCLA loneliness scale. To further support the predictive relationship between self-efficacy and loneliness, these authors tested a path model that also included personality, social and academic variables. Even with the inclusion of these other variables, self-efficacy uniquely predicted both the intimate others and social others components of loneliness. These findings suggest that higher levels of self-efficacy may protect against loneliness.

Bandura (1997) suggested that people with high self-esteem should have high self-efficacy, since they undertake more challenging goals than those with low self-esteem. This suggestion was confirmed by the findings of Betz and Klein (1996) a correlation of $r = .53$ for males and $r = .43$ for females between generalized self-efficacy and self-esteem. Further, Wulff and Steiz (1999) identified a correlation of $r = .38$ between generalized self-efficacy and self-esteem. These studies demonstrate a moderate relationship between generalized self-efficacy and self-esteem.

Gender differences in loneliness

Gender differences in loneliness have been examined widely, unfortunately, the results were inconclusive. For example, many studies identify male students as lonelier than female students (Deniz, Hamarta & Ari, 2005; Yang, 2009), others have shown that female students were lonelier than male students (Anderson, Horowitz, & French, 1983; Page & Cole, 1991), and others found no significant gender differences

in relation to loneliness (Al-Kfaween, 2010; Archibald, Bartholomew, & Marx, 1995; Knox, Vail-Smith, & Zusman, 2007; Weiss, 1973).

In a meta-analytic study of predictors of loneliness during adolescence, Mahon et al. (2006) found that 19 out of 31 studies showed no significant gender differences. Of the remaining 12 studies, 9 studies showed males were significantly lonelier than females were, two other studies showed females were significantly lonelier than males. In a related study, Yang (2009) affirmed that men had higher loneliness than women and self-esteem did not explain the degree of loneliness. Deniz, Hamarta & Ari, (2005) argued that loneliness levels are higher among male than female students because female students have better attachment skills and are well socialized in the social-emotional area.

As can be seen in the theoretical frame, loneliness is associated to many variables that might be seen as risk factors in college students' lives. Lonely students tend to become depressed, suicidal, and engage in self-destructive behaviors (Hermann & Betz, 2006). Further, loneliness has been associated to low self-esteem (Weiss, 1973), social skills (Deniz, Hamarta & Ari, 2005), interpersonal relationships, poor social adjustment, shyness, satisfaction (Çivitci & Çivitci, 2009), social support, and positive mood (Cacioppo, et al., 2006) in low degrees, but, on the other hand, negative mood, such as anxiety, anger, and depression in high degrees (Cacioppo et al., 2006). Moreover, loneliness has been found to be related to health outcomes such as increment in hypertension (Cacioppo, Crawford, Burleson, & Kowalewski, 2002) inefficiency in sleep (Hawkey & Cacioppo, 2010) and poor perceived health (Theeke, 2009).

Significance of the study

Despite increasing interest in loneliness-related issues in psychology, there is no study that investigated which variables contribute to UAE college students' loneliness. A study of loneliness among college students, particularly in the United Arab Emirates, is of significance as it can present practical information regarding the development of coping strategies for loneliness, and may provide knowledge for additional understanding of college students' traits in the Arab culture. Furthermore, Loneliness has been associated with various negative emotions and behaviors. Therefore, it is of great value to explore the predictors of loneliness and find effective ways to reduce lonely feelings among college students (Yang, 2009).

Study hypotheses

Based on the literature regarding the theories of loneliness and the findings of the previous studies, this study hypothesized the following: (1) Female students would experience higher levels of loneliness than male students; (2) higher levels of self-esteem will be associated with lower levels of loneliness; (3) higher levels of self-efficacy will be associated with lower levels of loneliness; (4) and the collectively of these independent variables (self-esteem, self-efficacy and gender) will account for a significant portion of variance in college students' loneliness.

The relationship between loneliness, self-esteem and self-efficacy has implications for college students' counseling because it was suggested that an increase in self-efficacy and levels of self-esteem might reduce levels of loneliness. Betz and Schifano (2000) reported that the studies that evaluate interventions were designed to increase the sources of self-efficacy which produces evidence that perceived efficacy expectations improve as a result of intervention. Accordingly, the study of self-efficacy may have practical implications for counseling, and for understanding psychological processes and behavior change (Hermann, 2005).

Method

Participants

The main sample of this study involved 495 undergraduate students who were selected from the population of Al Ain University of Science and Technology (AU) in the United Arab Emirates. The sample was stratified by sex. Among the respondents, 292 (59%) were female students and 203 (41%) were male students. The mean age of the sample was 21.8 years ranging from 18 to 36 ($SD = 2.95$). With regard to their marital status, 361 (72.9%) were single, 112 were married (22.6%), and 22 (4.4%) were divorced. Of the sample as a whole, 194 were freshmen (39.2%), 132 (26.6%) were sophomores, 98 (19.8%) were juniors, and 71 (14.4%) were seniors.

Procedure

Permission for participation of students was obtained from the related chief departments and students in both samples (pilot and main) voluntarily participated in the research. The scales were distributed to the university students in a classroom setting. To avoid social desirability effects, titles of the scales were not displayed. All participants were treated in accordance with the American Psychological Association's ethical principles. All data were collected by the researcher between

August and December 2011. The sample for the pilot study consisted of a one-intact psychology class ($n = 28$) during the Fall Semester of the Academic Year 2011/2012. There were 12 males and 16 females. By using this sample the scales were piloted and the three-week test-retest reliability coefficients were computed. The students selected for the pilot study were not included in the main study.

Measures

Three scales; University of California Los Angeles Loneliness Scale, General Self-efficacy Scale, and General Self-efficacy Scale, in addition to the demographic sheet, were used to collect data in the current study. For the purpose of this study, by using the "forward-backward" procedure, the English version of the three scales (UCLA, SES and GSS) used in this study was first translated into the Arabic language by an expert in bilingual language, then another bilingual expert translated the Arabic version into English without accessing to the original version. A third bilingual faculty member compared the translated English versions. Any discrepancies between the original English versions and the back-translated versions were discussed carefully by the translators and then resolved by joint agreement.

These scales have been translated into different languages, and for many of these translations validation studies support the use of these instruments in different cultures. While the permission to use the UCLA Scale was obtained from its author, the other two scales (SES and GSS) are in the public domain. Therefore, they may be used without copyright permission.

1. Demographic Information. A questionnaire was designed to collect general demographic information including age, gender, college, income, marital status, and employment status.

2. University of California Los Angeles Loneliness Scale (Version 3) (Russell, 1996). UCLA was used to measure participants' level of loneliness. This 20-item scale asks participants about how frequently do they agree with statements such as "I feel left out", "I lack companionship" and "I am no longer close to anyone". It includes 9 positive and 11 negative items, randomly distributed throughout the scale. The items are scored on a 4 point Likert-type scale. Each item is rated from 1 (not at all true of me) to 4 (very true of me). The responses were summed for a total score in which high scores indicate greater loneliness. Reliability of the UCLA Loneliness Scale is high with a coefficient range of alpha .89 to .94 across various samples (Russell, 1996). Test-retest reliability in adult samples has also been found to be high with a correlation of .73 (Russell, 1996). The criterion-related validity has been examined. Russell (1996) concluded that the convergent validity of the loneliness scale was supported by the

strong significant correlations with other measures of loneliness such as The NYU Loneliness Scale and the Differential Loneliness Scale.

In the current study, Cronbach's alpha for UCLA Loneliness Scale was 0.91. Three-week test-retest reliability coefficient for SES was .89.

3. Self-Esteem Scale (SES, Rosenberg, 1965). This scale was used to measure participants' self-esteem. The SES is a 10 item self report measure. Each of the 10 items are rated on a 4-point Likert-type response format from 1 (*strongly disagree*) to 4 (*strongly agree*). A sample item is "On the whole, I am satisfied with myself". Five of the items are reverse scored (3, 5, 8, 9, 10), so the "strongly disagree" was given a score of 1, and "strongly agree" was given a score of 4. Higher SES scores indicate higher self-esteem levels. The SES has a reported reproducibility coefficient of .92 and a test retest correlation over 2 weeks of .85 (Robinson & Shaver, 1973). Convergent validity is reported between $r = .56$ and $r = .83$ (Robinson & Shaver, 1973). The Cronbach's alpha of the scale in the present study was .76. Three-week test-retest reliability coefficient for SES was .81.

4. General Self-efficacy Scale (GSS), (Jerusalem & Schwarzer, 1979). The General Self-efficacy Scale (GSS) was used to collect data about participants' general self-efficacy. The scale was originally developed in Germany by Jerusalem and Schwarzer in 1979, and originally consisted of 20 items. In 1981, it was reduced to 10 items and subsequently adapted to 28 languages including Arabic (Schwarzer & Jerusalem, 1995). The GSS was developed to measure perceived self-Efficacy at the broadcast level.

The scale has 10 items with a 4 point scale, ranging from 1 to 4 (1 = not at all true), (2 = Hardly true), (3 = moderately true), and (4 = exactly true). The items' example is "I can solve most problems if I invest the necessary effort"). Responses to all the 10 items have to be summed up to yield the final score with a range from 10 to 40. Higher scores indicate greater degrees of self-efficacy. GSS reliability has been established in samples from 23 nations, Cronbach's alphas ranged from .76 to .90, with the majority in the high .80s. Criterion-related validity is documented in numerous correlation studies where positive coefficients were found with favorable emotions, dispositional optimism, and work satisfaction. (Brenlla, Aranguren, Rossaro, & Vazquez, 2010). GSS reliability using Cronbach's alpha in the present study was .87, and its test-retest reliability coefficient was .79.

Data analysis

Descriptive statistic was utilized to describe the variables of this study. *t*-test was performed in order to compare males' and females' scores on main variables of the study. Pearson correlation analysis was used to examine the relationships between loneliness, self-esteem and social self-efficacy. Hierarchical multiple regression analysis was performed to identify the independent variables that are useful in predicting college students' feelings of loneliness.

Results

Means, standard deviations, and reliabilities of the scales for college students are reported in Table 1. The reliability for the scale of loneliness (UCLA) was assessed using Chronbach's alpha. The value of coefficient alpha was .91. Nurmi et al. (1997) reported similar reliability, with Chronbach alpha of .92. The range of scores in this study on loneliness was 18 to 72. The mean score of loneliness was 43.62 ($SD = 8.91$). This result was moderately higher than the total scale mean scores, on the UCLA Loneliness Scale, among western students and students in Turkey, which normatively range from 36.56 to 40.08 (Russell, 1996). However, the study conducted by Özdemir and Tuncay (2008) on a sample from three universities in Ankara indicated that the mean of students' loneliness score was 45.49. The mean self-esteem (28.2) score was on the higher end of the self-esteem scale score (10 to 40). A Chronbach's alpha of .76 was demonstrated for the SES. The mean score for self-efficacy was 27.5 indicating that respondents obtained above the average scale score when compared to scale score of 10 to 40.

Table 1. Descriptive statistics and Cronbach's alpha values ($n = 495$).

Variables	Males ($n = 203$)		Females ($n = 292$)		Total ($n = 495$)		α
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
Loneliness	40.96	11.08	45.06	9.93	43.38	10.60	.91
Self-esteem	29.43	5.50	26.97	4.44	28.60	5.14	.76
Self-efficacy	28.37	5.03	27.54	4.72	27.88	4.68	.87

Table 1 presents the mean scores for males and females on the loneliness level of participants. The mean UCLA Loneliness Scale score was 43.38 ($SD = 10.6$) for the total sample. Female students loneliness level ($M = 45.06$, $SD = 9.93$) is higher than male students ($M = 40.96$, $SD = 11.08$). To identify if the observed differences between

gender was statistically significant an independent *t*-test was applied to the data. The results revealed that there was a significant difference between males and female in terms of loneliness level ($t = -4.36, p < .001$). As can be seen in Table 2, results of the *t*-test showed that there is a significant difference in self-esteem scores between male and female students ($t = -2.3, p < .01$). However, the difference between males and females in self-efficacy was not statistically significant ($t = 1.1, p = .051$). The outcomes of *t*-test analysis in this study supported Hypothesis 1.

Table 2. Results of *t*-tests for all variables by gender ($n = 495$).

Variable		<i>n</i>	<i>M</i>	<i>t</i> value	<i>p</i>
Loneliness				-4.36**	.000
	Male	203	40.96		
	Female	292	45.06		
Self-esteem				-2.3*	.004
	Male	203	29.43		
	Female	292	28.07		
Self-efficacy				1.1	.051
	Male	203	28.37		
	Female	292	27.54		

* $p < .01$, ** $p < .001$

To test the hypothesis (Hypotheses 2 and 3) that self-esteem and self-efficacy would be negatively associated with loneliness, Bivariate Pearson's correlations between these variables were conducted and are displayed in Table 3. The table suggests a negative and moderate correlation between loneliness and self-esteem ($r = -.48, p < .001$) and self-efficacy ($r = -.46, p < .001$). Consistent with the hypotheses, these inter-correlations suggest that greater loneliness is related to both lower self-esteem and to lower self-efficacy. Self-esteem was highly correlated with self-efficacy ($r = .59, p < .001$). Respondents who reported higher self-esteem scored higher self-efficacy. Although the independent variables are significantly related to each other, they also possess correlation coefficients lower than .60, which indicates their utility in accounting for greater amounts of unique variance in subsequent regression analyses (Stevense, 1986).

Table 3. Correlation matrix of the dependent and independent variables ($n = 495$).

	1	2	3
Loneliness (1)	1.000	-.48**	-.46**
Self-esteem (2)		1.000	.59**
Self-efficacy (3)			1.000

* $p < .01$, ** $p < .001$

Table 4 shows the results of regression analysis on the full sample with the independent variables self-esteem, self-efficacy, and gender used to predict the dependent variable of loneliness. Forward selection hierarchical regression, in which the independent variables were entered into the regression equation in a preselected order, was chosen as the preferred statistical method because it is more theory driven than other methods, such as stepwise regression, also because it uses a prior conceptualization about the relationships among variables (Pedhazur, 1982).

Based on the strength of bivariate correlations between all variables, self-esteem was the first variable entered into each of the three regression equations, because it was known to be highly correlated with loneliness it was expected to account for the greatest amount of variance in predicting loneliness. Because the second hypothesis dealt with the specific contribution of self-efficacy to loneliness, its placement after self-esteem in the regression equation seemed most consistent with the theoretical rationale for performing the study. Gender was entered third, so the unique contribution of gender in predicting loneliness could be seen after both self-esteem and self-efficacy were entered. Table 4 showed the results of the analysis of Model 1, 2 and 3. R is different from zero at the end of each model.

In Model 1, after the entry of self-esteem in the equation, $R^2 = .229$, $F(1, 494) = 146.63$, $p < .001$. Self-esteem had a high significant ($\beta = -.479$, $p < 0.001$) contribution in predicting loneliness among participants. About quarter (22.9%) of the variability in loneliness was explained by self-esteem.

Model 2, with self-efficacy added to the prediction of self-esteem, $\Delta R^2 = .279$, $\Delta F(1, 492) = 35.733$, $p < .001$. Thus, self-efficacy predicted additional variance in loneliness beyond that shared with self-esteem. ΔR^2 increased .051 from .228 to .279 and self-efficacy jointly accounted for 28.1% of the variance in college students' loneliness. In Model 2, self-efficacy was a significant unique predictor ($\beta = -.283$, $p < .001$) of loneliness.

In Model 3, gender was introduced at step 3. The addition of gender increased the percentage of explained variance by 2.94%, $\Delta R^2 = .290$, $\Delta F(1, 491) = 9.048$, $p = 0.003$. ΔR^2 increased .011 from .279 to .290. These results indicate that gender predicted additional variance in loneliness, and it was a significant unique predictor ($\beta = .115$, $p = .003$). Self-esteem, self-efficacy, and gender altogether predicted 29.4% of the variance in loneliness. Self-esteem was found to have the largest contribution to a students' loneliness scores, followed by self-efficacy. Gender had a small contribution on students' loneliness. According to these findings, the hypothesis of this study (Hypotheses 2, 3 and 4) were supported and accepted.

Table 4. Regression results of self-esteem, general self-efficacy and gender on loneliness ($n = 495$).

Mod.	Variables	Std. β	R	Total R^2	ΔR^2	F total (df)	ΔF
1	Self-esteem	-.479**	.479	.229	.228	146.63 (1, 494)**	146.63
2	Self-esteem	-.311**	.531	.281	.279	96.347 (2, 493)**	35.733
	Self-efficacy	-.283**					
3	Self-esteem	-.301**	.543	.294	.290	68.298 (3, 492)*	9.048
	Self-efficacy	-.274**					
	Gender	.115*					

* $p < .01$, ** $p < .001$

Discussion

In the current study, the UCLA Loneliness Scale was used to determine the levels of college students' loneliness. Female students' loneliness level was higher than male students. This result supported some previous studies' findings (e.g., de Jong-Gierveld, 1987; Page & Cole, 1991). Whereas several studies found that loneliness levels were higher among males (e.g., Cheng & Furnham, 2002; Davis & Franzoi, 1986; Yaacob, Juhari, Abu-Talib & Uba, 2009; Yang, 2009), other studies found no significant differences between males and females (e.g., Brage, Meredith, & Woodward, 1993; Özdemir & Tuncay, 2008;). Although research findings concerning gender differences on loneliness are still not quite consistent, the current study provides evidence for females' higher loneliness than males. Regarding the gender differences in self-esteem and self-efficacy, this study revealed that males' self-

esteem was higher than that of females, whereas there was no significant gender differences on self-efficacy.

Gender differences in loneliness levels could be explained by the characteristics of the participants, and more likely their gender role in UAE society. In addition, it can be avowed that cultural construction of the family in UAE supports the gender differences in loneliness. Traditionally, religious, social and cultural norms in the UAE have influenced the position of women. Family dictates the rules and controls the daily life activities especially for females (Al Khatib, 2007). As Rokach and Brock (1997) outlined, the social tapestry, and the support network which are available to individuals in different cultures affect the causes of loneliness.

As hypothesized, the results of the correlation analysis showed that self-esteem was correlated significantly and negatively with loneliness. That is to say, if the self-esteem levels of college students increases, loneliness decreases. This finding was supported by McWhirter (1997) who found that loneliness had a moderate negative relationship with self-esteem. The findings of the present study indicated that self-esteem may play an important role in reducing loneliness among college students.

Finally, the relationship between loneliness and self-efficacy was examined by some researchers who have reported that there is a significant negative relationship between loneliness and self-efficacy (e.g., Hermann, 2005). Similarly, the findings of this study showed that loneliness was negatively associated with self-efficacy.

Self-esteem scores and self-efficacy scores were shown to have a statistically significant correlation for college students. Although, this finding contradicted the results of McKenzie (1999), it supported other studies (e.g., Blake & Rust, 2002; Hermann, 2005). From this result, it can be concluded that it matters how individuals perceive themselves. Individuals who are more efficacious have more esteem than those who are less efficacious. Also, students who have more self-esteem and more self-efficacy would suffer less loneliness syndrome.

In general, the findings of the present study denote that gender, self-esteem, and self-efficacy are critical predictors of college students' loneliness. Loneliness among college students was associated with decreased self-esteem and self-efficacy. These associations are in agreement with many previous findings. The negative relationship between self-esteem and loneliness can be interpreted as Hoffmann, Powlishta, and White (2004) noted that individuals with low self-esteem are likely to feel disapproved and rejected by others. Additionally they may have poor self-confidence and social skills required for initiating and developing relationships; factors that are related to loneliness. Moreover, Gerson and Perlman (1979) reported that poor social skills

predispose individuals to loneliness because of ineffective social interactions that do not generate positive reinforcement from the environment.

As a result, lonely people will not value themselves and will act to avoid anticipated rejection (Jones, 1982). In either case, attempts at interaction tend to decrease and become less effective, and a cycle of increased social pessimism about social relations is continued (Jones, 1982). The lack of internal emotions may function as a personal vulnerability factor to loneliness, and thus serious negative results influence the college students' mental health. Therefore, a greater importance should be given to the presence of high levels of both self-esteem and self-efficacy to decrease the levels of loneliness feelings of the college students.

The feelings of low self-esteem lead to attitudes of hopelessness, uselessness and feelings of scantiness. With these attitudes, it is difficult to build any social relationships and this leads to isolation and loneliness. The findings of the present study implied that low self-esteem and low self-efficacy are risk factors for loneliness among college students. College students who are lonely and have low self-esteem may lack social support, social skills and have interpersonal deficiency. Overall, the results of this study support previous suggestions (e.g., Smith & Betz, 2002) that both self-esteem and self-efficacy interventions can be helpful in reducing high levels of loneliness. Hermann & Betz (2006) suggested a model to increase personal efficacy and social skills. The model was based on Bandura's (1997) four sources of efficacy information – performance accomplishments, vicarious learning/molding, anxiety management, and social persuasion. These sources of information could easily be integrated within a social skills training or interpersonal skills group to increase personal efficacy and social skills.

Limitations and recommendations of the study

Overall, this study demonstrates increase understanding of loneliness and the relationship of loneliness to gender, self-esteem and self-efficacy among UAE college students. Although the results of the current study are interesting and have implications for interventions that could reduce loneliness feelings in college students, several limitations may have influenced the results. First, the sample did not represent all university students because of the convenience sampling. Therefore, caution need to be exercised in generalizing the findings of this study to college students. Second, the data in the current study were gathered at one point in time. Consequently, the respondents' perception may have been influenced by covariate factors. Thus, the interpretation of the results is constrained by the cross-sectional nature of the data. In addition, the current study was limited to self-report

data, which may raise the potential problems with desirability bias and tiredness, thereby affecting the result of the study. Finally, difficulties such as misunderstanding the Likert-type scale and carelessness were encountered in the administration of the instruments. These difficulties may have affected the scores obtained and thus weakened the validity of the study.

Based on the limitations, the findings should be interpreted cautiously and the findings need to be replicated with more representative sample of college students. In general, there is an obvious need to carry out further research to investigate the variables explored herein with large samples spanning multiple cultures or different ages, and with other populations, such as children and younger adolescents, older adults. Future studies should continue to explore other factors that might contribute to loneliness. In addition, there is a need for interventional studies aimed at helping college students who experience chronic loneliness. More so, research replicating the present study could also be performed to either confirm or repudiate the findings of the study.

This study has several practical implications for college counselors and parents. College students who are lonely and have low self-esteem, and low self-efficacy may lack social support, social skills and have interpersonal deficiency (Yaacob et al., (2009). The findings of the present study suggest that college counselors and health professionals can develop counseling and treatment interventions better tailored for lonely students if self-esteem and self-efficacy support are addressed. Programs can also be designed to better educate students, parents, and faculty members about contributing factors to loneliness, how to identify them and how to properly approach these factors. Improving students' self-esteem, enhancing their self-efficacy may contribute to better counseling and treatment programs for lonely college students.

Conclusion

As a result, it can be concluded that gender significantly contributed to loneliness feelings. This finding was supportive of previous studies that indicate females experience higher loneliness than males do. Self-esteem and self-efficacy are important variables in predicting variables of loneliness. As pointed out in the literature, loneliness and self-esteem have a strong correlation, and also in the self-efficacy literature.

Overall, the type of correlation between loneliness and self-esteem, self-efficacy, and gender were generally consistent with previous research, demonstrating that the features of lonely college students in the UAE are not unique, but are in fact

similar to what has been observed in other countries. Although future research is needed to clarify the causal relationship between the selected variables in this study, this investigation highlights the importance of developing a treatment and prevention programs and find ways to reduce the levels of loneliness among college students.

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