

State Anxiety: Internal and External Predictors

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Abstract

Objective: Studies have found significant correlations between state anxiety loneliness, depression, stress, social support, socioeconomic status, marital status, social desirability, traditional vs. non-traditional student and trait anxiety. However there was little research done using a path model with these variables. The purpose of this study was to create a path model to predict state anxiety using the correlation literature as a guideline for hypothesized direct and indirect effects. The researcher wanted to provide a more comprehensive look on the possible causes of state anxiety. **Method:** 405 undergraduate students attending the University of Nebraska-Lincoln were recruited for the study, grouped into traditional aged students and non-traditional aged students. The students completed a set of questionnaires that were given in a randomized order. **Results:** The hypothesized model did not work as well as the full model, however all models significantly predicted state anxiety and many significant direct and indirect effects were found.

State Anxiety: Internal and External Predictors

There has been vast research done on variables associated with anxiety. Horikawa & Yagi (2012) found that high levels of trait anxiety tended to predict high levels of state anxiety and therefore lower performance. Knowing that a characteristic can predict state anxiety brings into question what other things may predict state anxiety. A study looking into how social support effected state anxiety among pregnant woman found that higher mean social support scores (specifically family, friend, significant other, and total support scores) were significantly higher for those who had less anxiety during pregnancy (Duman & Kocak, 2013). This finding means that women who had higher social support had lower anxiety. This study displays how support can have an effect on anxiety. Other studies have also found this effect; specifically looking at friend social support. Bowers & Gesten (1986) found that more social support from friends reduced self-rated anxiety. Support has also been seen to have an effect on loneliness; Ginter Glauser & Richmond (1994) found less social support was related to longer loneliness duration. In the same study they found the longer duration of loneliness was associated with higher anxiety.

Social support may also have an effect on socioeconomic status; Lee & Mortimer (2009) found that open communication about work within a family household increased self-efficacy towards financial independence and possibly therefore a better socioeconomic status. The open communication displayed can be translated as family social support, meaning that the more family support a person has, the better socioeconomic status they may be in because of self-efficacy of financial independence. Socioeconomic status has also been found to have an affect on state anxiety; significant socioeconomic struggles were more prevalent for those who had higher chronic stress measures (Lantz, House, Mero, & Williams, 2005). Socioeconomic status

was significantly related to anxiety even after controlling for demographic variables (Gjerustad & Soest, 2012). Socioeconomic status is also associated with depression according to a study by Butterworth, Rodger & Windsor (2009). Many other variables seem to be associated with depression as well. A study from Frech & Williams (2007) found those who were depressed prior to marriage, had less depression after getting married. Meyer & Paul (2011) also found an association between marriage and depression. Specifically being married was related with less depression and anxiety but higher levels of stress. Furthermore marriage was associated with being less lonely after controlling for financial satisfaction and health (Stack, 1998). Another variable that seems to have an association with state anxiety is social desirability. Watson Milliron & Morris (1995) found a relationship between high social desirability and lower state anxiety as well as lower depression. Stress seems to have many associations including one with type of student (traditional or non-traditional). Giancola, Grawitch & Borchert (2009) found that non-traditional students tended to have higher stress levels. Hoi Yan (2006) also found that students who take night class (primarily non-traditional students who are working during the day) tended to have higher state and trait anxiety.

Although these associations give some interesting information there seemed to be a lack of path analysis data predicting state anxiety. I hypothesize that many of these variables may mediate the effects on state anxiety. I think the formed hypothesized model will work better than the full model. Specifically within the hypothesized model there will be direct effects on state anxiety from trait anxiety, family social support, marital status, socioeconomic status, social desirability, traditional vs. non-traditional aged student, loneliness, stress, depression, significant other social support, and friend social support. I also hypothesized indirect effects of family social support via socioeconomic status and loneliness; trait anxiety via traditional vs. non-

traditional student; marital status via loneliness, stress, depression, and significant other social support; socioeconomic status via stress and depression; social desirability via depression; and group via stress (see Figure 2).

Method

Participants

Participants consisted of 405 undergraduate University of Nebraska-Lincoln students. These participants were selected in two different categories, traditional aged students (ages 18 through 20 years old) and non-traditional aged students (ages 30 years and old). The traditional aged students were in the introductory psychology course at the University and were enlisted from a subject pool. The non-traditional aged students were enlisted from the records of registration for the University. Participants were 44.4% male and 55.6% female those in the traditional age group had a mean age of 18.7 while those in the non-traditional age group had a mean age of 38.4.

Measures

To measure social support the researcher used the Multidimensional Scale of Perceived Social Support [MSPSS] (Zimet et al., 1988). This scale uses 12 items split into three categories of social support: significant other, friend, and family. It uses a 7-point Likert scale for respondents' ratings. As well for measuring state and trait anxiety the State-Trait Anxiety Inventory [STAI] (Spielberger, Gorsuch, Lushene, Vagg & Jacobs, 1983) was administered. This scale contains 40 items, half measuring state anxiety and half measuring trait anxiety. The STAI uses a 4-point Likert scale for participants' responses. The Beck Depression Inventory [BDI] (Beck, 1967) was used as a measure for depression. The BDI contains 21 items each with four possible responses measuring from 0=low depression to 3=maximum depression. The researcher

also used the Revised UCLA Loneliness Scale [RULS] (Russell, Peplau & Cutrona, 1980). This scale uses a 4-point Likert scale for responding to a set of 20 items. The last scale used was Marlow-Crowne Scale of Social Desirability [MCSD] (Crowne & Marlowe, 1960). The MCSD contains 33 items measuring the want to seem socially acceptable to others.

Procedure

The traditional aged participants met at a set time with the researcher to complete the questionnaires that were arranged in a random order. The non-traditional participants were sent the questionnaires in the mail in a random order.

Results

A series of regression analyses were run to examine the direct and indirect relationships between state anxiety, loneliness, stress, depression, significant other social support, friend social support, marital status (coded as 1=single 2=married), socioeconomic status, social desirability, traditional or non-traditional aged student (coded as 1=traditional 2=non-traditional), trait anxiety and family social support. Figure 1 displays the full model; Table 1 displays the correlations and regression weights. The full model accounted for 61.2% of the variance in state anxiety with stress, friend social support, and trait anxiety having the major contribution. Trait anxiety had significant indirect effects via marital status, socioeconomic status, traditional or non-traditional aged student, and stress. Family social support had indirect effects via socioeconomic status, traditional or non-traditional aged student, and friend social support. Marital status and socioeconomic status both had an indirect effect via friend social support. Traditional or non-traditional aged student had an indirect effect via stress and friend social support.

The hypothesized model includes a direct effect of stress, friend social support, and trait anxiety in addition to an indirect effect from socioeconomic status via stress. The hypothesized model accounted for 61.2% of the variance in state anxiety. Figure 2 displays the hypothesized model; Table 2 displays the correlations and regression weights. The hypothesis was only partially supported with only stress, friend social support and trait anxiety having a direct effect on state anxiety. Partially supporting the hypothesis, only socioeconomic status had an indirect effect on state anxiety via stress. However this model did not perform as well as the full model, $Q=.084$ $W=934.215$ $p<.001$.

We also tested the model fit of a trimmed model, which includes only the significant paths from the full model. The trimmed model accounted for 60.6% of the variance in state anxiety. Figure 3 displays the full model; Table 3 displays the correlations and regression weights. After running the trimmed model regressions, family social support no longer had a significant indirect effect via depression, as well as social desirability no longer had a significant indirect effect via significant other social support. The trimmed model did not perform as well as the full model, $Q=.897$ $W= 41.679$ $p=.009$.

Discussion

Contrary to what was predicted, the hypothesized model did not work better than the full model. However there were confirmed hypotheses about some of the direct and indirect effects. Specifically, as hypothesized there were direct effects from trait anxiety, stress and friend social support. This confirms the findings of Horikawa & Yagi (2012) that trait anxiety was significantly correlated at state anxiety. As well the direct effect findings supported Duman & Kocak (2013) and Bowers & Gesten (1986) findings that higher social support was associated with lower anxiety. Also as hypothesized there was an indirect effect of socioeconomic status via

stress, supporting the results from Lantz, House, Mero & Williams (2005) finding significant socioeconomic struggles were more prevalent in those with high chronic stress. There was a noteworthy change between the full model and trimmed model of significant other social support with social desirability. While in the full model, social desirability significantly contributed to the significant other social support model, however when run in the trimmed model social desirability no longer contributed to the model. By removing socioeconomic status and trait anxiety from the model for significant other social support, this then altered the unique contribution of social desirability and rendered it non significant. More research would need to be done in order to pinpoint the reason for this change.

All models for state anxiety did provide a significant model for predicting state anxiety. This could be helpful in possibly reducing high anxiety for individuals by prevention of the other correlated variables. As well it could be helpful to have a predictive model for state anxiety in order to recognize those individuals who may be more prone to high anxiety. Specifically using a path analysis gives a more comprehensive look at the relationships between trait anxiety, marital status, social support, social desirability, loneliness, depression, stress, and whether or not an individual is a traditional aged or non-traditional aged student. By looking at these more complex relationships we are able to identify mediating effects of variables and therefore gathering more information than only running a regression model for state anxiety.

Future research may be done either finding earlier predictors than trait anxiety and family social support, or looking further into the effects of state anxiety and their relationship with the previous variables. It might also be worthwhile to look into the different effects different kinds of social support may have on anxiety. If significant differences were found this would allow clinicians to emphasize certain kinds of social support in order to reduce anxiety. It would also

be interesting to see if when social support is received has any different affects on anxiety. Again if significant results were found this would allow clinicians to emphasize social support at particular times in ones life in order to reduce anxiety. There is still significant research to be done on the causes and possible preventions of state anxiety.

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Figure 1

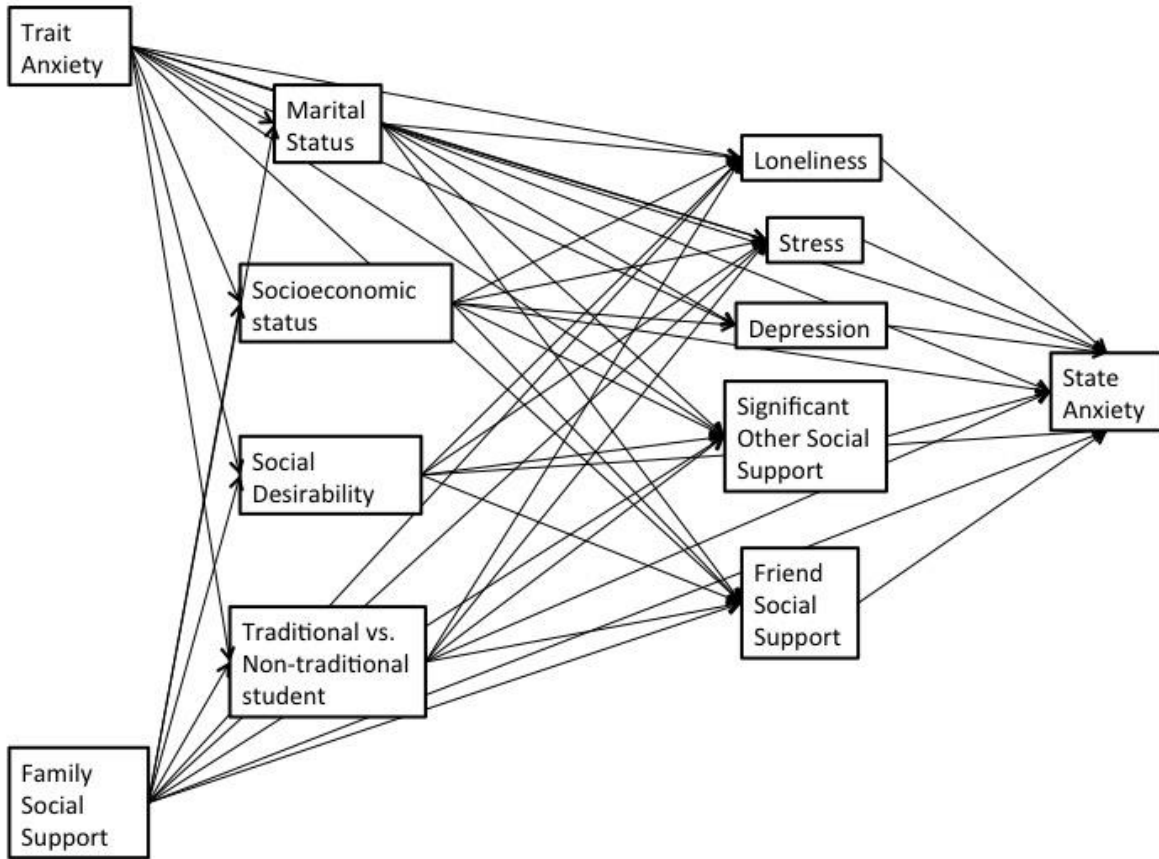


Table 1 Full model correlations and regression weights

Criterion	Predictors	β	Correlation
Marital Status [^]	Trait Anxiety	-.201***	-.191***
	Family Social Support	-.029	.040
Socioeconomic Status	Trait Anxiety	-.696***	-.725
	Family Social Support	.086*	.324***
Social Desirability	Trait Anxiety	-.397***	-.369***
	Family Social Support	-.082	.054
Traditional vs. Non-traditional Aged Student ^{^^}	Trait Anxiety	-.162**	-.089
	Family Social Support	-.215***	-.159**
Loneliness	Marital Status [^]	.005	.056
	Socioeconomic Status	-.337***	-.585***
	Social Desirability	.010	-.142**
	Traditional vs. Non-traditional ^{^^}	.254***	.262***
	Trait Anxiety	.248***	.554***
	Family Social Support	-.260***	-.494***
Stress	Marital Status [^]	.001	-.161**
	Socioeconomic Status	-.124	-.370***
	Social Desirability	-.051	-.217***
	Traditional vs. Non-traditional ^{^^}	-.122*	-.148**
	Trait Anxiety	.271***	.421***
	Family Social Support	-.089	-.205***
Depression	Marital Status [^]	.027	-.148**
	Socioeconomic Status	-.392***	-.677***
	Social Desirability	.001	-.258***
	Traditional vs. Non-traditional ^{^^}	-.064	-.084
	Trait Anxiety	.358***	.671***
	Family Social Support	-.084*	-.322***
Significant Other Social Support	Marital Status [^]	.252***	.184***
	Socioeconomic Status	.103	.326***
	Social Desirability	-.092*	.004
	Traditional vs. Non-traditional ^{^^}	-.162**	-.089
	Trait Anxiety	-.073	-.321***
	Family Social Support	.508***	.597***

Friend Social Support	Marital Status [^]	-.114*	-.151**
	Socioeconomic Status	.141*	.287***
	Social Desirability	-.035	.003
	Traditional vs. Non-traditional ^{^^}	-.128*	-.266***
	Trait Anxiety	-.052	-.259***
	Family Social Support	.442***	.519***
State Anxiety	Loneliness	.030	.481***
	Stress	.122**	.434***
	Depression	.085	.589***
	Significant Other Social Support	.003	-.289***
	Friend Social Support	-.097*	-.285***
	Marital Status [^]	-.025	-.150**
	Socioeconomic Status	.042	-.568***
	Social Desirability	.038	-.251***
	Traditional vs. Non-traditional ^{^^}	.005	-.061
	Trait Anxiety	.672***	.763***
	Family Social Support	.053	-.279***

[^] coded as 1=single and 2=married

^{^^} coded as 1=traditional and 2=non-traditional

*p<0.05 **p<0.01 ***p<0.001

Figure 2

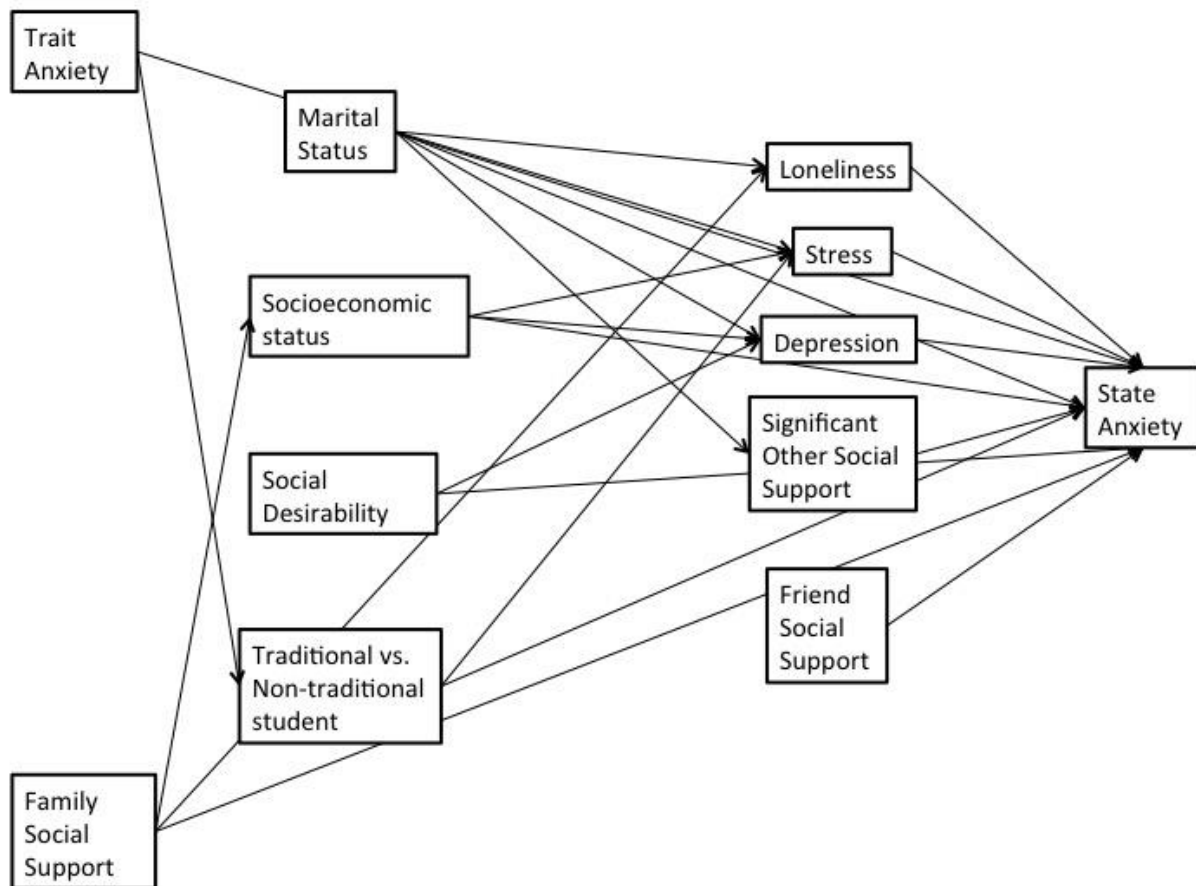


Table 2 Hypothesized model correlations and regression weights

Criterion	Predictors	β	Correlation
Socioeconomic Status	Family Social Support	.324***	.324***
Traditional vs. Non-traditional Aged Student^^	Trait Anxiety	-.089	-.089
Loneliness	Marital Status^	.076	.056
	Family Social Support	-.497***	-.494***
Stress	Marital Status^	-.034	-.161**
	Socioeconomic Status	-.359***	-.370***
	Traditional vs. Non-traditional^^	-.109	-.148**
Depression	Marital Status^	.027	-.148**
	Socioeconomic Status	-.392***	-.677***
	Social Desirability	.001	-.258***
Significant Other Social Support	Marital Status^	.184***	.184***
State Anxiety	Loneliness	.030	.481***
	Stress	.122**	.434***
	Depression	.085	.589***
	Significant Other Social Support	.003	-.289***
	Friend Social Support	-.097*	-.285***
	Marital Status^	-.025	-.150**
	Socioeconomic Status	.042	-.568***
	Social Desirability	.038	-.251***
	Traditional vs. Non-traditional^^	.005	-.061
	Trait Anxiety	.672***	.763***
	Family Social Support	.053	-.279***

^ coded as 1=single and 2=married

^^ coded as 1=traditional and 2=non-traditional

*p<0.05 **p<0.01 ***p<0.001

Figure 3

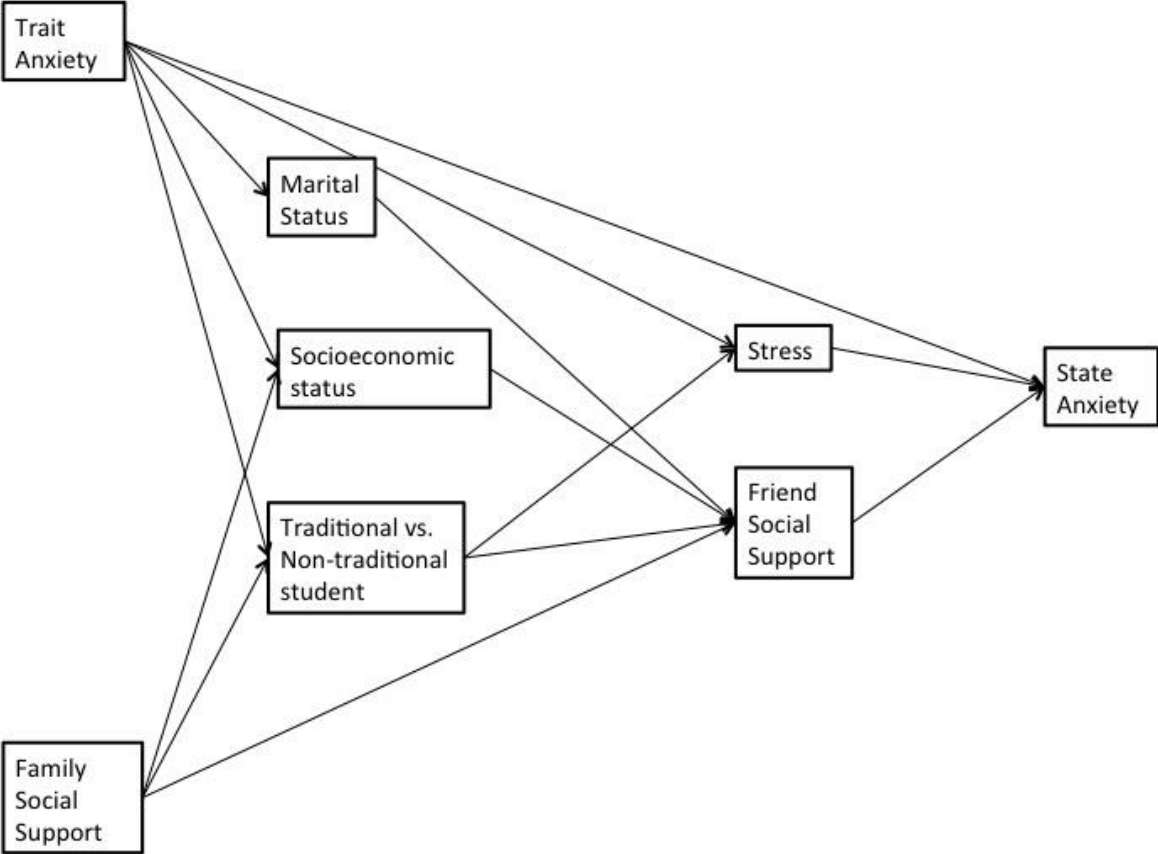


Table 3 Trimmed model correlations and regression weights

Criterion	Predictors	$\beta(r)$	Correlation
Marital Status [^]	Trait Anxiety	-.191***	-.191***
Socioeconomic Status	Trait Anxiety	-.696***	-.725***
	Family Social Support	.086*	.324***
Social Desirability	Trait Anxiety	-.369***	-.369***
Traditional vs. Non-traditional Aged Student ^{^^}	Trait Anxiety	-.162**	-.089
	Family Social Support	-.215***	-.159**
Loneliness	Socioeconomic Status	-.336***	-.585***
	Traditional vs. Non-traditional ^{^^}	.259***	.262***
	Trait Anxiety	.244***	.554***
	Family Social Support	-.260***	-.494***
Stress	Traditional vs. Non-traditional ^{^^}	-.111*	-.148**
	Trait Anxiety	.411***	.421***
Depression	Socioeconomic Status	-.390***	-.677***
	Trait Anxiety	.364***	.671***
	Family Social Support	-.071	-.322***
Significant Other Social Support	Marital Status [^]	.274***	.184***
	Social Desirability	-.041	.004
	Traditional vs. Non-traditional ^{^^}	-.166**	-.089
	Family Social Support	.562***	.597***
Friend Social Support	Marital Status [^]	-.112*	-.151**
	Socioeconomic Status	.166***	.287***
	Traditional vs. Non-traditional ^{^^}	-.132*	-.266***
	Family Social Support	.449***	.519***
State Anxiety	Stress	.137***	.434***
	Friend Social Support	-.093**	-.285***
	Trait Anxiety	.681***	.763***

[^] coded as 1=single and 2=married

^{^^} coded as 1=traditional and 2=non-traditional

*p<0.05 **p<0.01 ***p<0.001

