# INCREASE IN ANXIETY SYMPTOMS IN COLLEGE STUDENTS

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Anxiety is one of the most frequent problems of university students. Following the random sample of 260 freshmen we found significant increase in average anxiety level from the first through their second year of study. The aim of this study was to check some of the possible factors that might contribute to the change in anxiety level. Students were assessed twice: at the beginning of college and at the 4th semester. During the adaptation period they reported their anxiety as a trait (STAI-T), their present anxiety level (BAI) and adaptation to college (SACQ), and during the 4th semester their anxiety level was assessed again, as well as their automatic thoughts during study and taking exam. The results show that anxiety as a trait is a significant predictor of anxiety symptoms at the second year of study, but it does not differentiate students with increase and decrease of anxiety level after one year at the university. Poor emotional but better academic adjustment at the beginning of college contribute to higher anxiety level at the second year of study. Negative automatic thoughts related to fear of disappointing parents can best differentiate students with increase and decrease in anxiety symptoms.

## Introduction

While mental health of university students is recognized internationally as an important public health issue, more epidemiological data that allows benchmarking with general population data are needed. During the last decades there has been a marked increase in both the number of students with severe psychological problems on campus and the number of students seeking counseling services (Koutra, Katsiadrami & Diakogiannis, 2010). Based on several recent studies Roussis and Wells (2008) concluded that university students nowadays are struggling to cope with more severe psychological problems than in the past. In a large sample of Turkish university students Bayram and Bilgel (2008) found an alarmingly high prevalence of depression, anxiety and stress symptoms. A survey of approximately 13000 students in the USA demonstrated that there has been an increase in the number of students manifesting severe symptoms of stress and anxiety in the last fifteen years (Benton, Robertson, Tseng, Newton & Benton, 2003). Price (2010) suggested that the rising rates of mental illness among col-

lege students in the last 12 years might be due to more students entering college with pre-existing mental health problems.

Results from the 2009 National Survey of Counseling Center Directors indicate that more than one in 10 students sought counseling at college and university counseling centers in the 2008-09 school year, the highest proportion ever found in a long-running survey. Even more disturbing are center directors' reports that students are showing more serious psychological problems, including severe depression, anxiety and suicidal ideation (Munsey, 2010). Almost 56 percent of center directors reported that over the past five years, they have seen an increase in self-harming behaviors, such as cutting or hair pulling to reduce anxiety.

Anxiety is also one of the most frequent reasons for which students seek help from the Student Counseling Center at the University of Rijeka. They experience different sources of anxiety, among which are separation problems, test anxiety, anxiety in different social situations, panic and generalized anxiety. College transition is recognized as a critical developmental period (Baker & Siryk, 1984) and it might present different sources of stress. Separation from significant others (parents, siblings, friends) might disrupt the social support system of the students. Their negative expectation of possible academic failure, uncertainties such as not knowing what will happen in the near future or even after they finish their course, might cause increases in anxiety. Even if separation anxiety is considered rare among adults, Seligman and Wuyek (2007) found that 21% of first-semester college students reported symptoms of separation anxiety which had an impact on their educational choices and experiences. Those authors argued that, contrary to young children, for college-age students the demands for developmentally appropriate levels of separation include both physical separation for lengthy periods and emotional individuation.

Our longitudinal research concerning risk and protective factors of student college adjustment, in which we followed a representative sample of students from the beginning of college during 3 years of their study, revealed that 26% of students at the first semester have moderately increased anxiety (BAI score above 16) (Beck & Steer, 1993). Using different outcome measures of student mental health, we have found an increase in anxiety ($p< .05$) and psychosomatic symptoms after one year at college, while there was no difference in depression, aggression or substance use. In this study we investigate factors that might contribute to increases in students' anxiety level after one year at the university. We have hypothesized that better adjustment at the beginning of college will help students cope with different challenges at the university. Our previous research has shown that negative automatic thoughts (fear of failure, fear of disappointing parents and lack of motivation) are significant predictors of test anxiety (Zivcic-Becirevic, 2003), so we expected their significant role in the state anxiety level at the university students.

# Method

*Sample.* The random sample of 260 freshmen from 19 to 29 years ($M = 20.23$ years, $SD = 1.42$) from University of Rijeka, Croatia, was assessed twice. There were 71% females, with this unbalanced gender distribution in the sample mirroring the distribution in student population at the University.

*Instruments.* The Spielberger's State-Trait Anxiety Inventory (STAI) (Spielberger, Gorusuch, Lushene, Vagg & Jacobs, 1970) is a 40-item self-report scale with 20 items assessing state anxiety and 20 items assessing trait anxiety. In this study we used only the 20 items referring to trait anxiety. The scale has good internal reliability (Cronbach's alpha .92).

The Student Adaptation to College Questionnaire (SACQ) (Baker & Siryk, 1999) is a 67 item self-report questionnaire that is widely used to measure the quality of adaptation to university life. The SACQ provides an overall index of adjustment as well as scores on four aspects of students' adjustment to university: academic, social and personal-emotional adjustment, and institutional attachment. We used 65 items because two of them were not interpretable in our sample. Factor analyses extracted three factors: emotional, academic and social adjustment to college, explaining 36.72 % of variance. Final version consists of 59 items. The scale has good internal consistency. Cronbach's alpha for academic adjustment is .90, for social adjustment .83 and .91 for emotional adjustment subscale (Smojver-Azic, Zivcic-Becirevic & Jakovcic, 2010).

The Beck Anxiety Inventory (BAI) (Beck, Epstein, Brown, & Steer, 1988) is a 21-item questionnaire measuring anxiety symptoms on a 4-point Likert scale, higher scores indicating increased levels of anxiety. The high internal consistency of the instrument (Beck et al., 1988; Piotrowski, 1999) was supported in the current study (Cronbach's alpha .90 in both).

Student Automatic Thoughts Questionnaire is a 45 item instrument to assess how often (from 0=*never* to 3=*very often*) students have certain automatic thoughts during study and taking exams (Zivcic-Becirevic & Anic, 2001). We used only the three subscales that assess negative thoughts (fear of failure, fear of disappointing parents and lack of motivation and interest). They all have good internal consistency (Cronbach's Alpha from .81 to .93).

*Procedure.* During their 1$^{st}$ semester we assessed students' trait anxiety, as well as their present state anxiety level and adaptation to college. After one year we have again assessed their state anxiety level, as well as their automatic thoughts that they have during study and taking exam.

# Results

The hierarchical regression analysis was used to check the contribution of assessed variables in explanation of anxiety symptoms at the second year of study. Anxiety as a stable personality trait was introduced in the first step to control its effect on state anxiety. Initial college adjustment is introduced in second step. Finally, we included negative automatic thoughts as situation specific cognitive variables. The results are presented in Table 7-1.

Table 7-1. The effects of trait anxiety, adaptation to college and negative automatic thoughts on the level of state anxiety at the $2^{nd}$ year of study

| Predictor variables | $R^2$ Adjusted | $R^2$ Change | $\beta$ | unique variance |
|---|---|---|---|---|
| Step 1 | 0.26 | 0.27*** | | |
| STAI | | | 0.52*** | 0.26 |
| Step 2 | 0.35 | 0.10*** | | |
| STAI | | | 0.26** | 0.03 |
| Academic adjustment | | | 0.21* | 0.01 |
| Emotional adjustment | | | -0.46*** | 0.09 |
| Social adjustment | | | -0.06 | 0.00 |
| Step 3 | 0.53 | 0.19*** | | |
| STAI | | | 0.26** | 0.03 |
| Academic adjustment | | | 0.21* | 0.01 |
| Emotional adjustment | | | -0.20* | 0.01 |
| Social adjustment | | | -0.08 | 0.00 |
| NAT failure | | | 0.37*** | 0.05 |
| NAT disappointing parents | | | 0.24*** | 0.03 |
| NAT lack of motivation | | | -0.08 | 0.00 |

*p<.05; **p<.01; ***p<.001

The results of the regression analysis show that variables at each step contribute significantly to the explanation of anxiety level at the $2^{nd}$ year of study, with anxiety as a trait explaining the most of the variance. Besides trait anxiety, the individual predictors of the anxiety symptoms in the $3^{rd}$ step are negative automatic thoughts related to fear of failure and fear of disappointing parents. According to expectations emotional adjustment is a negative predictor of anxiety, suggesting that students who are better emotionally adjusted at the beginning of college have lower level of anxiety at the $2^{nd}$ year. On the contrary, academic adjustment is a positive predictor, suggesting that students who are better academically adjusted when starting college have more anxiety symptoms at the $2^{nd}$ year of study.

Comparing students' reported levels of state anxiety at the 1st (M=12.10; SD=8.37) and the 4th semester (M=13.35; SD=8.14), we have found that their anxiety level increased in average ($t_{1,235}$=2.84, p<.005). While anxiety increased in 55% of students, it decreased in 34% of them, and there was no change in 11% of students. To check the differences in assessed variables between the group of students with decrease and increase in anxiety we conducted a two-way ANOVA (anxiety change x gender). For this analysis we have used two extreme groups, 30% of students with highest increase and 30% of students with highest decrease in anxiety, while 40% of students (with small or no change in anxiety) were excluded from this analysis. The results are presented in Table 7-2.

Table 7-2. Differences between males and females with increase and decrease in anxiety levels

| | anxiety change | Females | | Males | |
|---|---|---|---|---|---|
| | | *M* | *SD* | *M* | *SD* |
| trait anxiety | ↓ | 42.02 | 11.27 | 37.88 | 7.44 |
| | ↑ | 39.59 | 8.83 | 39.65 | 7.72 |
| academic adjustment | ↓ | 126.51 | 27.57 | 127.13 | 17.58 |
| | ↑ | 132.02 | 25.89 | 126.10 | 21.98 |
| emotional adjustment | ↓ | 120.04 | 37.59 | 139.13 | 27.63 |
| | ↑ | 138.49 | 33.44 | 142.90 | 23.93 |
| social adjustment | ↓ | 63.62 | 16.46 | 69.19 | 15.03 |
| | ↑ | 64.83 | 15.17 | 64.50 | 13.28 |
| NAT - fear of failure | ↓ | 20.49 | 9.42 | 12.13 | 7.57 |
| | ↑ | 20.80 | 8.06 | 17.45 | 7.90 |
| NAT - fear of disappointing parents | ↓ | 3.71 | 4.95 | 1.38 | 2.03 |
| | ↑ | 4.83 | 5.16 | 6.80 | 4.70 |
| NAT - lack of motivation | ↓ | 7.82 | 3.35 | 7.44 | 4.34 |
| | ↑ | 8.94 | 2.97 | 9.30 | 4.44 |

↓ decrease in anxiety symptoms      ↑ increase in anxiety symptoms

The results show that students with increased anxiety levels at the second year of study have more negative automatic thoughts related to fear of disappointing parents ($F_{1,136}$ = 12.37, p<.001) and lack of motivation and interest ($F_{1,136}$ = 4.82, p<.05). There is no difference in

anxiety as a trait, in student adjustment to college or in other types of negative automatic thoughts between students with increase and decrease in anxiety symptoms.

Regarding gender differences we hypothesized higher anxiety in girls. Based on our previous research (Smojver-Azic, Zivcic-Becirevic & Jakovcic, 2010) we have expected that girls would have better academic but lower emotional adjustment. The results show no gender differences in anxiety as a trait or in students' adjustment to college. The only significant gender difference shows that female students have more negative thoughts related to fear of failure ($F_{1, 136} = 12.65$, p<.001). There is also a significant interaction effect of BAI change and gender on negative automatic thoughts related to fear of disappointing parents ($F_{1,136} = 5.35$, p<.05), suggesting that more negative thoughts of this kind are more frequent only in male, but not in female students with increase of anxiety level. Girls with increase and decrease of anxiety symptoms do not differ in the amount of these negative automatic thoughts. This effect is presented in Figure 7-1.
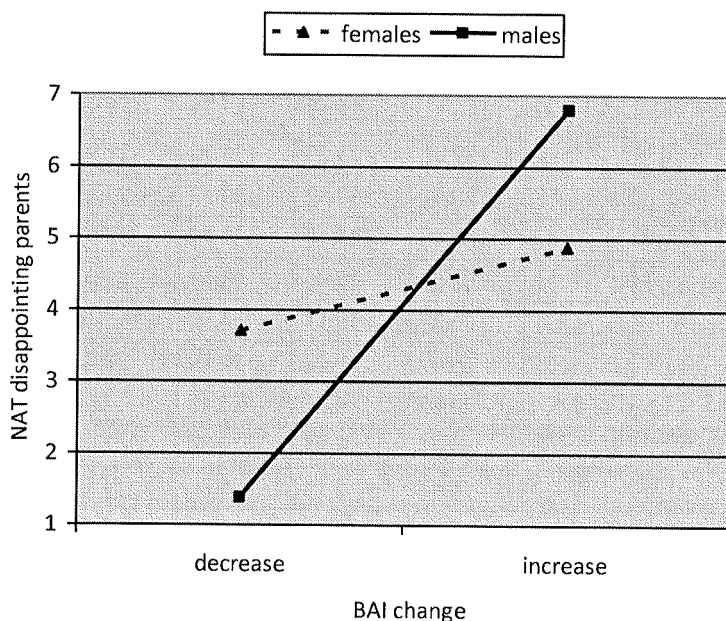


Figure 7-1. Interaction effect of change in anxiety level and gender on negative automatic thoughts related to fear of disappointing parents

## Discussion

Much research confirms that the beginning of college is a stressful period for young people, which might contribute to increase in the level of anxiety symptoms (Deroma, Leach & Leverett, 2009, Roussis & Wells, 2008, Benton et al., 2003, Bayram & Bilgel, 2008). If anxiety is a reaction to separation from significant people, lack of social support and adaptation to new situations and academic demands, than we would expect its decrease with time spending at college and after first adjustment to it. On the contrary, we have found a significant increase in the average anxiety level in students after one year at college and we wanted to check which factors might contribute to it. Trait anxiety is the most significant predictor of anxiety symptoms at the second year of college. As expected, better general emotional adjustment at the beginning help students in coping with anxiety symptoms. It is interesting that better academic adjustment at the beginning of college contribute to more anxiety symptoms one year later. It may be that less adjusted students are the ones who do not have high academic expectations of themselves, so they do not worry about their achievements.

Looking at the factors that best differentiate the group of students with increase from the group of students with decrease in anxiety symptoms, we have found that negative automatic thoughts related to fear of disappointing parents play the most significant role, especially in the group of males. In her research on university students in Turkey, Bahar Aydin also found a significant role of students' automatic thoughts. They explain 39% of the total variance of student state anxiety (Bahar Aydin, 2009). More automatic thoughts related to fear of failure in females is expected. It is well known that women are more prone to worry about different aspects of their life (Cartwright-Hatton, 2006), also about their personal achievements. Contrary to that, our results show that thoughts related to fear of disappointing parents are equally frequent in male and female students, but it seems that male students are especially sensitive to them.

Even if most of the students when entering college are in some way separated from their parents and live independently, their parents still play very significant role for them. Our experiences in the university counseling center also support the fact that students often worry more about their parents' than about their own expectations. It is not the same kind of fear that they had as children about the possible negative consequences of failing, but more about not reaching their parents' goals. It is not rare that students enroll the school that is not their first choice, but more their parents' choice, which often produce high anxiety, as well as possible disappointment, failure and consequently depression. It seems that we should pay more attention to emotional adjustment of freshmen, but also older students, and help them follow their

own goals and expectations, as well as to achieve higher emotional independence in this critical period when entering adult life.

Besides well known fact that individuals with higher trait anxiety will have more anxiety symptoms in specific situation, our results show that worry about academic failure, especially fear of not fulfilling parents' expectations contribute to increase of anxiety symptoms in college students. It is especially true for male students and for students who are academically well adjusted at the beginning of college, who strive more toward better academic achievement. These results support some of our earlier results (Zivcic-Becirevic, 2008) and stress the importance of developing effective preventive and intervention strategies to improve students' not only academic, but also emotional adjustment, to improve their life satisfaction and mental health. Cognitive strategies for restructuring negative automatic thoughts may be especially useful to help them cope with their anxiety related to academic success.

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