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# Is The Healing Force Of Music Far Away From The Undergraduate Music Education Students?

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**Abstract**

Depression, anxiety and stress are common among undergraduate students and a world-wide phenomenon. In this study we wanted to assess depression, anxiety and stress levels as well as burnout and vigor among undergraduate music education students in one Turkish university and compare the results with the results of medical students from the same institution. We collected data from 160 music education and 928 medical students by self reporting using DASS-42 (Depression-Anxiety-Stress Scale-42), Shirom-Melamed Burnout (SMBM) and Shirom-Melamed Vigor (SMVM) measures. We found that mean depression, anxiety and stress scores were significantly higher among music education students compared to medicine students.

There were no significant differences in terms of burnout whereas music education students were found more vigorous than medical students. We suggested some implications for prevention of depression, anxiety and stress.

**Key Words:** Depression, anxiety, stress, Burnout, Vigor, Music education students, Turkey.

**Introduction**

Evidence that suggests that university students are vulnerable to mental health problems has generated increased public concern in Western societies (Stanley& Manthorpe, 2001). High rates of depression, anxiety and stress among students all over the world in higher education has been revealed in many of the previous studies (Adewuya, Ola, Olutayo, Mapayi & Oginni, 2006; Nerdrum, Rustøen & Rønnestad, 2006; Ovuga, Boardman & Wasserman, 2006; Stewart-Brown, Evans, Patterson, Petersen, Doll, Balding, & Regis, 2000; Wong, Cheung, Chan, Ma, & Tang, 2006; Voelker, 2003 ). Psychological morbidity among undergraduate students represents a neglected public health problem and holds major implications for campus health services and mental policy-making (Poch , Villar, Caparros, Juan , Cornella , Perez, 2004; Royal College of Psychiatrists , 2003; Stewart-Brown et al., 2000). Undergraduate students need to cope with psychological and psychosocial changes that are connected to the development of an autonomous personal life and additionally they have to cope with the academic and social demands that they encounter in university studies and in their preparation for professional careers. Therefore, the period of undergraduate education is regarded by many as important for developing systems and intervention methods that may prevent or reduce mental problems (Gjerde, 1993).

The healing force of music is known since the ancient times. There are many studies about the positive impact of music therapy in psychiatric disorders and in many other health problems (Evans, 2002; Punkanen, Fachner, Erkila, Punkanen, Fachner, Ala-Ruona, Pöntiö, Tervaniemi, Vanhala , & Gold, 2011; Rao, Nainis, Williams, Lngner, Eisin, & Paice, 2009; Smolen, Topp, & Singer,2002; Whang, Whang, Zhang, 2011). Therefore it can be suggested that music students may have low levels of depression, anxiety and stress compared to other undergraduates.

There are few studies among music students in terms of psychological well-being. Spahn, Strukely, and Lehmann found depression and anxiety rates among music students higher than those of other undergraduates. Some studies assessed burnout and stress of undergraduate music students and found high levels of burnout and stress (Bernhard, 2005; 2007; Orzel, 2010; Sternbach, 2008).

In Turkey, epidemiological data about psychological morbidity among undergraduate students are not well-studied. Although some recent studies revealed high rates of depression, anxiety and stress and even suicidal ideations among university students (Aktekin, Karaman, Senol, Erdem, Erengin, & Akaydin, 2001; Arslan, Ayranci, Unsal, & Arslantas, 2009; Bayram & Bilgel, 2008; Bostanci, Ozdel, Oguzhanoglu, Ozdel, Ergin, Atesci, & Karadag 2005; Ozdemir, & Rezaki,

2007). In their study among music students Karaoglu & Karaoglu (2009) found high rates of depression and anxiety but no differences compared to other undergraduate students.
The purposes of this study are:

1. To assess the depression, anxiety and stress levels as well as the levels of burnout and vigor among music education majors,
2. To compare the results of undergraduate music education students with the results of medicine students.

**Material and Methods**

This study is a cross-sectional study based on self reporting.

*Study Place and Participants*

This study was performed in one university in Turkey. This university is located in one of the biggest cities of the country, is a public university, and has about 40,000 undergraduate students in 10 faculties and 15 vocational high schools. Participants were selected from the Music Education Department of the Faculty of Education and from Faculty of Medicine. The Music Education Department started undergraduate education in 1981-1982 academic years. The aim of the department is to train music teachers for primary and secondary education. Voluntary participation and anonymity were respected. Approval for this study was obtained from the ethics commission of the university. All participants were recruited directly in their respective classrooms during the second week of the academic year and students willing to participate filled out the questionnaires. Participation rate for music education students was 100.0% (N= 160) whereas for medical students it was 69.4% (928 out of 1338 students). None of the participants had a diagnosed psychiatric illness.

*Instruments*

Depression, anxiety and stress were measured by using of 42-item Depression Anxiety and Stress Scale (DASS) developed by Lovibond & Lovibond (1995 a; 1995 b) and was constructed for Turkish language by Uncu, Bayram, & Bilgel (2007). The DASS-42 is a self-administered instrument with well-established psychometric properties in clinical and non-clinical samples, and has been shown to differentiate between the three states of depression, anxiety and stress (Antony, Bieling , Cox, Enns, & Swinson1998; Crawford, & Henry 2003; Lovibond & Lovibond 1995a ; 1995b). The depression scale assesses dysphoria, hopelessness, devaluation of life, self deprecation, lack of interest or involvement, anhedonia and inertia. The anxiety scale assesses autonomic arousal, skeletal muscle effects, situational anxiety and subjective experience on anxious effects. The stress scale is sensitive to levels of chronic non-specific arousal. The scale assesses difficulty relaxing, nervous arousal and being easily upset or agitated, irritability or over-reaction and impatience.

Burnout and vigor were measured by Shirom-Melamed Burnout (SMBM) and Shirom-Melamed Vigor (SMVM) Measures.

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*Shirom-Melamed Burnout Measure (SMBM).* A series of studies conducted over the past 10 years, on a diverse range of occupational groups, has confirmed the three-factor structure and also a total burnout scale representing all three factors. The three subscales were as follows: the physical fatigue (PF) factor (6 items) –the frequency of feeling tired, physically drained and physically exhausted; the cognitive weariness (CW) factor (5 items)- the frequency of having difficulty in concentrating and slow thinking processes; and the emotional exhaustion (EEx) factor (3 items) –the frequency of feeling emotionally fatigued and emotionally burned out (Shirom 2005; Shirom & Melamed, 2006). Responses were given by a 7-point scale ranging from 1 (almost never) to 7 (almost always).

*Shirom-Melamed Vigor Measure (SMVM)*. Is a 12 items measure and has three subscales: Physical strength (PHY, 5 items); emotional energy (EE, 4 items); and cognitive liveliness (CL, 3 items). Responses were given by a 7-point scale from 1(never) to 7 (always) (Shirom, 2005). SMBM and SMVM were translated into Turkish with standard translation back translation process.

Data about the socio-demographic characteristics of the students was collected by a questionnaire prepared by the authors.

*Analyses*

Statistical analyses were conducted with the SPSS version 11.5 for Windows (SPSS Inc., Chicago, IL, USA). Reliability coefficients (Cronbach's alpha) of the Turkish version of DASS-42, SMSM and SMSV were calculated. Correlation, regression analyses, t tests and variance analyses were performed to compare differences in DASS scores between different student groups.

**Results**

*Participants' characteristics*

Our study group was consisted of 160 music education and 928 medicine students. About ½ of music education and 2/3 of medicine students were female. Mean ages for music education and medicine students were similar. Nearly half of the music education students' mothers were employed whereas most of the medicine students' mothers were housewives. Previous residency of music education students was mostly urban areas whereas about 1/3 of medical students came from rural areas or small towns. More than half of the music education students were satisfied with their current education whereas this was true only for 1/3 of medicine students. Some socio-demographic characteristics of study participants are shown in
Table 1.

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Table 1. Socio-demographics of the study group (%)

| | Music-education students | Medicine students |
|---|---|---|
| Mean age (mean±SD) | 20.30±1.81 | 21.99± 2.37 |
| Gender | | |
| Male | 50.6 | 33.7 |
| Female | 49.4 | 66.3 |
| Mother's education | | |
| Primary or less | 35.6 | 50.9 |
| Secondary | 36.3 | 26.9 |
| University | 28.1 | 22.2 |
| Father's education | | |
| Primary or less | 23.1 | 23.1 |
| Secondary | 32.5 | 29.3 |
| University | 44.4 | 47.6 |
| Mother's occupation | | |
| Housewife | 55.0 | 70.6 |
| Employed | 45.0 | 29.4 |
| Father's occupation | | |
| Unemployed | 1.9 | 2.5 |
| Laborer | 12.7 | 13.9 |
| Civil servant | 21.5 | 27.3 |
| Professional occupation | 12.0 | 24.5 |
| Other | 51.9 | 31.8 |
| Family's economic situation | | |
| Good | 34.4 | 36.4 |
| Moderate | 58.1 | 58.8 |
| Bad | 7.5 | 4.8 |
| Previous place of residency | | |
| Rural area+ small town | 16.3 | 32.7 |
| City | 33.9 | 33.4 |
| Metropolitan area | 50.0 | 33.9 |
| Satisfaction of current education | | |
| Satisfied | 58.8 | 34.1 |
| Not satisfied | 20.6 | 36.4 |
| Don't know | 20.6 | 29.5 |

*Depression Anxiety and Stress*

The mean values of depression anxiety and stress of music education and medicine students is shown in Table 2.

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Table 2. Depression anxiety and stress among music education and medicine students (Mean±SD)

| | Music education | Medicine | Student t-test | 95% CI of the difference | p |
|---|---|---|---|---|---|
| Depression | 12.24± 9.52 | 9.03 ± 7.46 | 4.8103 | 1.898 to 4.521 | <0.0001 |
| Anxiety | 11.67 ±8.74 | 7.86 ± 5.83 | 7.0202 | 2.743 to 4.876 | <0.0001 |
| Stress | 16.86 ±9.38 | 13.15 ± 7.37 | 5.6307 | 2.415 to 5.004 | <0.0001 |

The mean depression, anxiety and stress values of music education students were significantly higher than those of medicine students.
Distribution of students according to their depression scores is shown in Table 3.

Table 3. Percent distribution of students according to depression, anxiety and stress scores

| | Music education | Medicine |
|---|---|---|
| Depression | | |
| Normal (0-9) | 43.1 | 61.0 |
| Mild (10-13) | 17.5 | 16.3 |
| Moderate (14-20) | 21.9 | 14.2 |
| High (21-27) | 7.5 | 5.9 |
| Very high (28+) | 10.0 | 2.6 |
| Anxiety | | |
| Normal (0-7) | 38.1 | 52.2 |
| Mild (8-9) | 9.4 | 13.7 |
| Moderate (10-14) | 21.3 | 22.1 |
| High (15-19) | 15.6 | 8.9 |
| Very High (20+) | 15.6 | 3.1 |
| Stress | | |
| Normal (0-14) | 45.6 | 58.8 |
| Mild (15-18) | 14.4 | 19.9 |
| Moderate (19-25) | 20.6 | 15.9 |
| High (26-33) | 12.5 | 4.0 |
| Very High (34+) | 6.9 | 1.4 |

Among music education students there was no statistically significant differences in terms of mean depression, anxiety and stress scores among male and female students, but we found significant differences among different grades. The mean scores of senior students were higher than those of freshmen, sophomore and junior students for all of the three measurements. Students whose families' economic situation was bad had higher scores of depression. The mean scores of depression, anxiety and stress among music education students who were satisfied with their current education were significantly lower than those of who were not

satisfied. Table 4. shows the mean scores of depression, anxiety and stress according to some characteristics of the music students.

Table 4. Music education students' mean depression, anxiety and stress scores and some characteristics (Mean±SD)

| | Depression | Anxiety | Stress |
|---|---|---|---|
| Gender | | | |
| Male | 14.53±10.55 | 13.06±9.79 | 18.08±10.54 |
| Female | 11.38±8. 88 | 11.30±8.21 | 16.50±8.82 |
| | N.S. | N.S. | N.S. |
| Grade | | | |
| 1. grade | 10.47±9.41 | 10.61±7.95 | 14.11±8.51 |
| 2. grade | 10.63±7.66 | 9.73±6.76 | 15.71±8.55 |
| 3. grade | 12.82±9.64 | 11.69±9.63 | 16.08±8.83 |
| 4. grade | 16.14±10.74 | 15.86±9.66 | 22.54±9.99 |
| | F=2.994 | F=3.825 | F=6.437 |
| | p=0.033 | p=0.011 | p=0.000 |
| | 4>1 | 4>1; 4>2 | 4>1; 4>2; 4>3 |
| Economic situation | | | |
| Good | 11.09±9.54 | 10.58±9.40 | 15.89±10.11 |
| Moderate | 12.43±9.20 | 12.11±8.36 | 17.22±8.95 |
| Bad | 18.67±10.80 | 16.17±8.31 | 20.75±9.74 |
| | F=3.151 | | |
| | p=0.046 | N.S. | N.S. |
| | 1<3 | | |
| Satisfaction of Education | | | |
| Yes | 9.59±7.30 | 10.01±7.21 | 15.35±8.26 |
| No | 18.34±11.46 | 15.69±10.56 | 20.13±11.03 |
| Don't know | 15.07±10.27 | 13.73±9.74 | 18.97±10.15 |
| | F=13.130 | F=6.163 | F=3.963 |
| | p=0.000 | p=0.003 | p=0.021 |
| | 1<2; 1<3 | 1<2 | 1<2 |

N.S.= Not significant

*Burnout and Vigor*

The mean values of burnout and vigor of music education and medicine students is shown in Table 5.

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Table 5. Mean burnout and vigor scores among music education and medicine students

| | Music education | Medicine | t-test | 95% CI of the difference | p |
|---|---|---|---|---|---|
| Burnout Total | 3.54±1.07 | 3.54±1.19 | | | N.S. |
| PF | 4.25±1.47 | 4.17±1.51 | | | N.S. |
| CW | 3.37±1.22 | 3.44±1.43 | | | N.S. |
| EEx | 2.42±1.34 | 2.47±1.25 | | | N.S. |
| Vigor Total | 4.72±1.06 | 4.45±1.02 | 2.2574 | 0.034 to 0.505 | 0.0247 |
| PHY | 4.29±1.36 | 4.08±1.28 | | | N.S. |
| CL | 4.82±1.25 | 4.28±1.22 | 3.8038 | 0.260 to 0.819 | 0.0002 |
| Ee | 5.18±1.29 | 5.04±1.21 | | | N.S. |

PF= Physical Fatigue; CW= Cognitive Weariness; EEx= Emotional Exhaustion
PHY= Physical Strenght; CL= Cognitive Livelines; Ee= Emotional Energy

We did not find significant differences for mean burnout scores as well as for mean scores of burnout subscales among music education and medicine students. On the other hand music education students were more vigorous than medicine students and had more cognitive liveliness. Table 6. shows the mean scores of burnout, vigor and their subscales according to some characteristics of the music students.

Table 6. Music education students' mean scores of burnout and vigor subscales and some characteristics (Mean±SD)

| | BURNOUT | | | VIGOR | | |
|---|---|---|---|---|---|---|
| | Physical Fatigue | Cognitive Weariness | Emotional Exhaustion | Physical Strenght | Cognitive Liveliness | Emotional Energy |
| Gender | | | | | | |
| Male | 4.18±1.51 | 3.35±1.26 | 2.27±1.37 | 4.32±1.30 | 4.75±1.30 | 5.27±1.35 |
| Female | 4.42±1.49 | 3.40±1.23 | 2.70±1.40 | 4.23±1.55 | 4.94±1.20 | 5.02±1.22 |
| | N.S. | N.S. | N.S. | N.S. | N.S. | N.S. |
| Grade | | | | | | |
| 1. grade | 3.53±1.41 | 3.44±1.27 | 2.31±1.24 | 4.75±1.39 | 4.74±1.26 | 5.05±1.44 |
| 2. grade | 4.11±1.46 | 2.98±1.08 | 2.30±1.21 | 4.42±1.00 | 4.97±1.11 | 5.18±1.12 |
| 3. grade | 4.44±1.37 | 3.38±1.41 | 2.35±1.54 | 4.05±1.42 | 4.78±1.37 | 5.14±1.39 |
| 4. grade | 4.99±1.44 | 3.71±1.13 | 2.73±1.55 | 3.92±1.60 | 4.78±1.35 | 5.40±1.31 |
| | F=7.038 p=0.000 4>1; 4>2; 3>1 | N.S. | N.S. | F=2.873 p=0.038 4<1 | N.S. | N.S. |
| Economic Situation | | | | | | |
| Good | 3.92±1.71 | 3.07±1.46 | 2.18±1.39 | 4.43±1.43 | 4.86±1.36 | 5.15±1.31 |
| Moderate | 4.34±1.33 | 3.47±1.09 | 2.55±1.42 | 4.31±1.35 | 4.85±1.21 | 5.22±1.33 |

| | | | | | | |
|---|---|---|---|---|---|---|
| Bad | 5.11±1.39<br>F=3.507<br>p=0.032<br>1<3 | 3.92±1.13<br><br>N.S. | 2.47±1.06<br><br>N.S. | 3.55±1.29<br><br>N.S. | 4.42±1.25<br><br>N.S. | 5.15±1.18<br><br>N.S. |
| Satisfaction of Education | | | | | | |
| Yes | 3.83±1.40 | 3.24±1.21 | 2.30±1.33 | 4.55±1.18 | 4.96±1.15 | 5.23±1.34 |
| No | 5.29±1.16 | 3.67±1.39 | 2.70±1.55 | 3.64±1.55 | 4.61±1.61 | 5.10±1.37 |
| Don't know | 4.48±1.57<br>F=13.560<br>p=0.000<br>1<2 | 3.45±1.18<br><br>N.S. | 2.47±1.40<br><br>N.S. | 4.16±1.59<br>F=5.602<br>p=0.004<br>1>2 | 4.60±1.17<br><br>N.S. | 5.14±1.18<br><br>N.S. |

There were no significant differences in terms of burnout and vigor subscale scores among male and female music education students. Senior students had higher scores in physical fatigue and lower scores in physical strength than those of freshmen, sophomores and juniors. Students whose families were in bad economic situation had higher scores in physical fatigue. Students who were not satisfied with their current education had higher scores in physical fatigue and lower scores in physical strength.

**Discussion**

In this study we aimed to measure the depression, anxiety and stress levels as well as burnout and vigor of music education students and compare the results with the measures of medicine students in a Turkish university.

We found that music education students had higher levels of depression, anxiety and stress compared to medicine students. On the other hand no significant differences were found in terms of burnout. Music education students were found to be more vigorous than medical students because of their higher levels cognitive liveliness. The cognitive liveliness subscale includes the items of: "I feel I am able to contribute new ideas", "I feel I can think rapidly", and "I feel able to be creative". Brousseau (1983) has argued that autonomous jobs, namely jobs that allow employees to formulate more elaborated work plans and pursue self-determined goals, would enhance feelings of personal efficacy and thereby enhance their feelings of cognitive liveliness. We can assume that music education has provided more autonomity, more elaborated work plans and self-determined goals to music education students than medical education has provided to medicine undergraduates.

Music captivates and maintains attention, stimulating and utilizing many parts of the brain. Music is adapted to, and can be reflective of, a person's ability. Music structures time in a way that we can understand and music is an effective memory aid. A great deal of evidence exists showing a correlation between musical training and cognitive proficiency. The research of

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Fujioka, Ross, Kakigi, Pantev, & Trainor (2006) suggests that music training has a profound effect on rewiring the brain for cognitive functions. Leaver, Lare, Zielinski, Halpern, and Rauschecker (2009) showed that music activates networks in the brain associated with anticipation, attention and neural clairvoyance. A new research suggests that music training has a positive effect on mental acuity, specifically in the areas of cognitive, verbal and emotional intelligence (Kraus & Chandrasekaran, 2010) . Evidence from these studies is supporting our finding of high levels of cognitive liveliness among music education students.

On the other hand opposite to our assumption we found higher levels of depression, anxiety and stress among music education students then among medicine students. Our assumption was based on the evidence of relaxing and therapeutic effects of music on mood disorders (Erkkila et al., 2011; Wang, Wang & Zhang, 2011). The causes depression, anxiety and stress should need further evaluation but some suggestions could be as follows: While music education students have same class loads and the same social stresses as other students, they also have their music activities. The hours they spend practicing, taking lessons, perhaps taking part in additional select ensembles, all of this is taking time and left little or no time for relaxation, entertainment and sports. Music students share all the common stressors of school and everyday life that affect everyone and additional they are faced with the performance anxiety and stress. Even though the student years are a time for developing social skills, it remains a fact of life that music students improve by practicing in isolation away from others. Excessive self-criticism in practicing could be a predisposing factor for depression and anxiety and students who don't look like they are having fun in practicing, who seem to display excessive seriousness in the way they approach music may develop psychiatric disorders. In their study Spahn, Strukely & Lehman (2004) found that music students depression and anxiety scores were higher than those of the medical and sports students. A study among Turkish students found no significant difference in terms of depression and anxiety symptoms among music and other students (Karaoglu & Karaoglu, 2009).

Growing awareness of health issues is a fairly recent development among musicians and music teachers in Turkey. The performing arts medicine should be established in order to diminish both physical and psychological injuries among performing artists, students and teachers. Institutions should assist students to acquire knowledge from qualified professionals and authoritative medical sources regarding the maintenance of professional health and prevention of injuries or disorders. For example (Deckro, Ballinger, Hoyt, Wilcher, Dusek, Myers, Greenberg, Rosenthal, & Benson, 2002) suggested 90 minutes of mind and body intervention, once a week for a period of six weeks. Contents of the intervention included relaxation-response-based skills (diaphragmatic breathing, guided imagery, progressive muscle relaxation, brief relaxation exercises, yoga stretches, and mindfulness), cognitive behavioral interventions (identifying automatic thoughts, challenging cognitive distortions, affirmations, and goal setting), lecture and discussion topics (stress, stress symptoms, and coping, mind/body connection, physiology of stress and the relaxation response, and weekly discussion of relaxation practice), and individual practice (daily relaxation-response practice and completion of practice log). Cai (2000) suggested physical exercises. Music therapy in conjunction with

cognitive-behavioral intervention may also be found effective (Cheek, Bradley, Parr, & Lan, 2003).

While further research should explore the effects of this type of intervention on the mental health of pre- and in-service music educators, instructing music education majors to explore the benefits of these therapies may reduce levels of depression, anxiety and stress among some students.

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