

# UC Berkeley

## Theses

### Title

Depression and the Use of Counseling Services Among Medical Students

### Permalink

<https://escholarship.org/uc/item/6x63k2vv>

### Author

Givens, Jane L

### Publication Date

1995-04-01

### Copyright Information

This work is made available under the terms of a Creative Commons Attribution-NonCommercial-NoDerivatives License, available at <https://creativecommons.org/licenses/by-nc-nd/4.0/>

Depression and the Use of Counseling Services Among Medical Students

by

Jane Lucile Givens

B.M. (Boston University) 1987

M.M. (Temple University) 1989

A thesis submitted in partial satisfaction of the  
requirements for the degree of

Master of Science

in

Health and Medical Sciences

in the

GRADUATE DIVISION

of the

UNIVERSITY of CALIFORNIA at BERKELEY

Committee in charge:

Professor Emeritus Henrik L. Blum, MD MPH, chair

Lecturer Maureen Katz, MD

Professor Steven P. Segal, PhD

1995

The thesis of Jane Lucile Givens is approved:

---

Chair

Date

---

Date

---

Date

University of California at Berkeley

1995

## Table of Contents

- I Depression
- II Depressive Symptomatology Among Medical Students: A Review of the Literature
- III The Stresses of Medical Education
- IV Counseling Services and Stress Prevention in Medical School
- V A Survey of Medical Students at the University of California, San Francisco
  
- VI Conclusions
- Bibliography
- Appendices

## Introduction

I would like to explain how I came to be interested in the topic of medical student depression. I believe this is an important and under recognized problem which I became acutely aware of through the tragic death of a friend. Before moving to Berkeley to attend the Joint Medical Program, I was living in St. Paul taking classes at the University of Minnesota. During that time I became friends with a number of people who later went on to attend medical school at the University. Among them was a young man who, unbeknownst to me, was suffering from depression. He became more despondent as time went on and eventually committed suicide in the fall of his second year of medical school. I was especially moved to find out that although he was aware of his illness, he was unable to utilize counseling services at school due to a fear of lack of confidentiality and was unable to ask for help in other ways because of the stigma of a diagnosis of depression. It was because of this that I was particularly moved to investigate medical student mental health and the pressures of medical education.

## Acknowledgments

I would like to thank the following people who have been integral to this research project:

My thesis committee: Henrik Blum, M.D., Maureen Katz, M.D. and Steven Segal, Ph.D., the 1994 first and second year students at UCSF who participated in the study, the students of the Joint Medical Program who helped me refine my questionnaire, Mary Croughan-Minnihane for assisting me greatly with distributing the survey, Jeanne Burns, M.D. for encouraging me to pursue my research goals, Miriam Komaromy, M.D. for inspiring me to continue when I was discouraged, Nancy Kaltreider, M.D. and Emily Osborne, M.D. for helping to make the data collection possible, and Chris DeLisle for her friendship and passion for improved medical student mental health.

# Chapter One

## Depression

### Depressive Disorders as Defined by the DSM IV

While "depression" is a word frequently used in a casual context, the clinical disease state has specific diagnostic criteria that distinguish it from the bothersome but normal mood alteration commonly referred to. Depression as a diagnostic entity belongs to the family of mood disorders, characterized predominantly by changes in mood state. Among the mood disorders are major depressive disorder, dysthymic disorder and bipolar disorders. This classification schema is presented in the Diagnostic and Statistical Manual of Mental Disorders IV (DSM IV) <sup>1</sup>, the most widely used diagnostic system for psychiatric illness in the U.S.. In this paper, unless otherwise specified, the term depression will refer to major depressive disorder. The following description and diagnostic criteria for major depression are taken from the DSM-IV and will be used as a foundation. There are criticisms of the DSM diagnostic system, including arguments about the cultural applicability for certain populations <sup>2</sup>, discussions of which are beyond the scope of this paper.

Depression is a syndrome with cognitive and physiological features. According to the DSM IV, the diagnosis of major depressive disorder is based on the existence of depressed mood or loss of interest combined with at least four additional depressive symptoms for a period of at least two weeks. The other symptoms include changes in appetite or sleep pattern, physical agitation or slowing of activity, decreased energy, a sense of

---

<sup>1</sup> American Psychiatric Association. Diagnostic and Statistical Manual of Mental Disorders, 4th ed., (Washington, DC: American Psychiatric Association, 1994)

<sup>2</sup> Loring Marti, Powell Brian. Gender, Race, and DSM-III: A Study of the Objectivity of Psychiatric Diagnostic Behavior. *Journal of Health and Social Behavior* 29(March):1-22, 1988

worthlessness or guilt, difficulty thinking, or recurrent thoughts of death or suicide. The patient must also display significant distress or impairment of functioning. An episode of major depression generally lasts 6 months. However, depression is a recurrent disease for many. Dysthymia is a related disorder, characterized by depressive symptoms over a two year period but without the degree of functional impairment associated with major depression.

## **Epidemiology**

The most recent and complete information on the epidemiology of mental disorders in the U.S. is from the Epidemiologic Catchment Area study initiated in 1980 by the National Institute of Mental Health. This study involved over 18,000 persons in five communities across the nation. According to the ECA data, the one year prevalence rate of major depression in the U.S. is 5.0 per 100 adults, and the prevalence rate of dysthymic disorder is 5.4 per 100<sup>3</sup>. If one looks at point prevalence, the rates as determined by community samples are 5-9% for women and 2-3% for men<sup>4</sup>. There is a higher prevalence of major depression among women, they are 2 and 3 times more likely to experience the disease than men<sup>5</sup>. Although depression is often thought of as a disease of the elderly, incidence rates for young adults and adolescents have been increasing in the later half of the 20<sup>th</sup> century as a new cohort of depressed young adults has been reported in the U.S. and other first world countries<sup>6</sup>. The lifetime prevalence of major depression is currently between 10-

---

<sup>3</sup> Regier Darrel, Narrow William, Rae Donald, Manderscheid Ronald, Locke Ben, Goodwin Frederick, The de Facto US Mental and Addictive Disorders Service System. Archives of General Psychiatry 50(Feb):85-94, 1993

<sup>4</sup> American Psychiatric Association. Diagnostic and Statistical Manuel of Mental Disorders, 4th ed.

<sup>5</sup> Weissman Myrna, Leaf Philip, Holzer Charles, Myers Jerome, Tischler Gary, The Epidemiology of Depression. Journal of Affective Disorders 7:179-88, 1984

<sup>6</sup> Klerman Gerald, Weissman Myrna, Increasing Rates of Depression. Journal of the American Medical Association 261(15):2229-2235, 1989



25% for women and 5-12% for men <sup>7</sup>, although prevalence rates have been increasing over the past few decades <sup>8</sup>.

## Risk Factors

As mentioned earlier, depression is often a recurrent disease. Thus, a previous episode of depression is a strong risk factor for another episode. Approximately half the persons with one episode of major depressive disorder will have a recurrent episode <sup>9</sup>, which will put them at even higher risk for a third episode <sup>10</sup>. A relapse after recovery from one episode of depression is more likely to occur in the setting of emotional stress or lack of social support <sup>11</sup>. Another strong risk factor for depression is having a first-degree relative with depression, this increases the risk by a factor between two and three <sup>12</sup>. It is not clear whether this increased risk is related to genetics or shared family environment, studies of twins have not proved conclusive with respect to unipolar depression <sup>13</sup>. Another risk factor is young age (25-34) <sup>14</sup>. A detailed analysis of the ECA data <sup>15</sup> reveals that additional risk factors for major depression include being separated or divorced and having low socioeconomic status (SES). Race or ethnicity alone is not considered important in determining risk factors although ethnic minorities (and women) are at increased risk for

---

<sup>7</sup> American Psychiatric Association, Diagnostic and Statistical Manual of Mental Disorders, 4th ed.

<sup>8</sup> Klerman, Weissman, *Increasing Rates*

<sup>9</sup> American Psychiatric Association, Diagnostic and Statistical Manual of Mental Disorders, 4th ed.

<sup>10</sup> Gold Philip, Goodwin Frederick, Chrousos George, *Clinical and Biochemical Manifestations of Depression*. (part 1) *The New England Journal of Medicine* 319(6):348-53, 1988

<sup>11</sup> Belsher Gayle, Costello Charles, *Relapse After Recovery From Unipolar Depression: A Critical Review*. *Psychological Bulletin* 104(1):84-96, 1988

<sup>12</sup> Weissman Myrna, *Advances in Psychiatric Epidemiology: Rates and Risks for Major Depression*. *American Journal of Public Health* 77(4):445-51, 1987

<sup>13</sup> Stoudemire Alan, Clinical Psychiatry for Medical Students, 2nd ed. (Philadelphia : J.B. Lippincott Co., 1994) p. 214

<sup>14</sup> Weissman, *Advances in Psychiatric Epidemiology*

<sup>15</sup> Regier DA, Farmer ME, Rae DS, Myers JK, Kramer M, Robins LN, George LK, Karno M, Locke BZ. *One-Month Prevalence of Mental Disorder in the United States and Sociodemographic Characteristics: The Epidemiologic Catchment Area Study*. *Acta (sychiatr Scand)* 88(1):35-47, 1993

low SES. This study demonstrates the strong effect of low socioeconomic status as a risk factor for mental illness. The odds of a person in the lowest SES group having any mental illness are 2.5 times that of those in the highest SES group after controlling for age, gender, marital status, race and ethnicity. In another longitudinal study using the ECA data from New Haven <sup>16</sup> comparing persons living in poverty (as defined by federal govt. guidelines) to those not living in poverty, reports that the risk for new onset of major depression is 2.06 times higher (95% CI = 1.05-4.04) for the poverty group. This increased risk from poverty persists after controlling for sex, age and race (limited to black vs. white). The authors believe this data adds support to the social causation hypothesis of psychiatric illness. In summary, the major known risk factors for depression are: a previous episode of depression, female gender, poverty, having a first-degree relative with depression and young age.

### **Etiology of Depression**

Consistent with the debate regarding the etiology of mental illness in general, there is considerable argument about the causes of depression. Much of the discussion about the etiology of depression revolves around the relative contributions of physical, psychological and social factors. A full discussion of this question would be quite extensive, the following is meant to be a brief overview of the topic.

From a purely biological standpoint, depression is thought to be related to a deficit of neurotransmitters in the brain. This is the basis for pharmacological treatment with drugs that alter the concentration of neurotransmitters, principally norepinephrine, dopamine and serotonin. The knowledge that neurotransmitter levels are low in depression is intriguing

---

<sup>16</sup> Bruce Martha, Takeuchi David. Poverty and Psychiatric Status. Archives of General Psychiatry 48(May):470-4, 1991

and it offers a foothold for pharmacological therapy. However, what precipitates the neurotransmitter imbalance remains unclear.

Psychodynamic theories often explore the way in which childhood experiences affect the adult. For instance, childhood exposure to environments of excess criticism, emotional unresponsiveness, exploitation, or loss, may be related to adult depression. These childhood experiences may lead to chronic states of low self-esteem and an inability to effectively handle emotional stress in adult life. The adult who reacts to stress with rigid defense mechanisms is thus thought to be more prone to depression <sup>17</sup>. Consistent with this theory is the finding that loss of a parent during childhood is a strong predictor of psychiatric illness in adults <sup>18</sup>. It is interesting to note that while certain personality traits such as obsessiveness, dependency and poor social skills may be associated with depressive illness, they are not thought to be causative factors and are more likely manifestations of attempts to cope with the disease state <sup>19</sup>.

Cognitive theorists view depression as primarily a thought disorder rather than a mood disorder, where distortions in both thought process and content lead to negative views of the world, the future and the self. In this setting, depressed mood occurs as a reaction to overly negative thoughts. Cognitive therapy attempts to alter thought patterns in order to alleviate depressive symptoms <sup>20</sup>.

---

<sup>17</sup> Gold, Goodwin, Chrousos. Clinical and Biochemical Manifestations of Depression.

<sup>18</sup> Breier Alan, Kelsoe John, Kirwin Paul, Beller Stacy, Wolkowitz Owen, Pickar David. Early Parental Loss and Development of Adult Psychopathology. Archives of General Psychiatry 45:987-93, 1988

<sup>19</sup> Akiskal Hagop, Hirschfeld Robert, Yerevanian Boghos, The Relationship of Personality to Affective Disorders. Archives of General Psychiatry 40:801-10, 1983

<sup>20</sup> Joseph Susan. "Cognitive Theory," in Women and Depression, eds. Ruth Formanek, Anita Gurian (New York: Springer Publishing Company, 1987), 48

Major depression is often preceded by acute stressful life events <sup>21</sup>, a fact which leads some to hypothesize about the role that life events play in triggering the syndrome. While acute events may precede depression, there may be an even higher likelihood that long-term stress will precipitate the disease <sup>22</sup>. The long-term stress that women in our society experience as a result of disadvantage in status and exposure to discrimination is thought by many to be the cause of their higher depression rates <sup>23</sup>. Social origin theorists also point to low social class as a major risk factor for both men and women <sup>24</sup>. It is evident that not all persons under long-term stress develop depression and a multifactorial etiology is the most likely. A person at high risk for developing depression may have a combination of a genetic predisposition, chronic life stress and low coping mechanisms. The ability to handle stress effectively often requires social support. It has been found that the lack of an intimate partner <sup>25</sup>, marital distress <sup>26</sup> and ineffective help-seeking behavior <sup>27</sup> are all significant factors in identifying vulnerability to depression.

### **Morbidity and Mortality**

Depression can be a devastating illness. The pain of depression is considerable and has been assessed as worse than the physical pain of severe illness <sup>28</sup>. Depressed individuals are at increased risk for suicide. Up to as many as 15% of patients with severe major

---

<sup>21</sup> Alnaes Randolph, Torgersen Svenn, Mood Disorders: Development and Precipitating Events. Canadian Journal of Psychiatry 38(3):217-224, 1993

<sup>22</sup> Brown George, "Causal Model of Depression," in Stress and Mental Disorder, ed. James Barrett (New York:Raven Press, 1979), 113

<sup>23</sup> Weissman Myrna, Klerman Gerald, Sex Differences and the Epidemiology of Depression. Archives of General Psychiatry 34(Jan):98-111, 1977

<sup>24</sup> Brown George, "Causal Model of Depression," in Stress and Mental Disorder, ed. James Barrett (New York:Raven Press, 1979), 113

<sup>25</sup> Brown, "Causal Model", 115-6

<sup>26</sup> Barnett Peter, Gotlib Ian, Psychosocial Functioning and Depression: Distinguishing Among Antecedents, Concomitants, and Consequences. Psychological Bulletin 104(1):97-126, 1988

<sup>27</sup> Paykel E.S., "Life Events and Depression," in Stress and Mental Disorder, ed. James Barrett (New York:Raven Press, 1979), 83-4

<sup>28</sup> Osmond Humphry, Mullaly Robert, Bisbee Cynthia, The Pain of Depression Compared With Physical Pain. The Practitioner 228((1395):849-53, 1984

depression commit suicide <sup>29</sup>. Another way to state the association between depression and suicide is to note that up to 80% of suicides are thought to be related to depression <sup>30</sup>.

## Diagnosis and Treatment

In general, mental and addictive disorders go largely untreated in this country where less than one third of persons with these ailments receive treatment in a year. A study published in 1978 <sup>31</sup> of adults with major depression revealed that 49% received professional treatment during the year, 27.8% of it from specialty mental health services and the remainder from general medical services. Depression is also an underdiagnosed disease, especially in the general medical practice setting <sup>32</sup>. This is significant in light of the fact that the majority of patients (60%) with mental disorders receive care only from general medical practitioners <sup>33</sup>, and that approximately half of the initial diagnoses are made in these settings <sup>34</sup>. One of the reasons for underdiagnosis of depression is that many patients experience depression somatically. These patients present to their primary care physician with a constellation of physical complaints that may not be recognized as depression <sup>35</sup>. Other reasons for underdiagnosis may include a reluctance on the part of physicians to inquire about their patients' emotional concerns <sup>36</sup>, or lack of adequate training in how to diagnose depression <sup>37</sup>. It is clear that depression is not adequately

---

<sup>29</sup> American Psychiatric Association, Diagnostic and Statistical Manual of Mental Disorders, 4th ed.

<sup>30</sup> Nolen-Hoeksema, Sex Differences in Depression (Stanford:Stanford Univ. Press, 1990) 35.

<sup>31</sup> Regier et al., The de Facto Mental Service System.

<sup>32</sup> Jones Ralph, Badger Lee, Ficken Roland, Leeper James, Anderson Russell, Inside the Hidden Mental Health Network. *General Hospital Psychiatry* 9:287-93, 1987

<sup>33</sup> Schulberg Herbert, Burns Barbara, Mental Disorders in Primary Care: Epidemiologic, Diagnostic, and Treatment Research Directions. *General Hospital Psychiatry* 10:79-87, 1988

<sup>34</sup> Regier et al., The De Facto Mental Service System

<sup>35</sup> Katon Wayne, Russo Joan, Somatic Symptoms and Depression. *The Journal of Family Practice* 29(1):65-9, 1989

<sup>36</sup> Sanson-Fisher R., Maguire P., Should Skills in Communicating With Patients Be Taught in Medical School? *The Lancet* Sept 6: 523-6, 1980

<sup>37</sup> Cantor Joel, Baker Laurence, Hughes Robert, Preparedness For Practice: Young Physicians' Views of Their Professional Education. *Journal of the American Medical Association* 270(9):1035-40, 1993

treated in the primary care setting even when it is correctly diagnosed <sup>38</sup>. This is unfortunate because when treated with a combination of drug and psychotherapy, depression can often be controlled or cured. Some estimates of successful treatment for major depressive disorder are in the range of 80-90% <sup>39</sup>.

There is considerable social stigma associated with depression and a sense of shame may accompany the diagnosis. The social undesirability of being labeled as depressed may be strong enough to prevent those with the illness from acknowledging it to themselves or others. When this occurs the disease goes untreated and coping mechanisms are employed, many of which may be detrimental to functioning. An inability to acknowledge depressive illness may be particularly likely to exist in social environments that value independence, self-determination and stoicism. Unfortunately, the medical profession may be one such environment where it is difficult to "admit" to having depression and where those affected are unable to seek help for fear of ridicule or judgment. This can affect medical students who it should be remembered are not immune to illness.

---

<sup>38</sup> Eisenberg Leon, Treating Depression and Anxiety in Primary Care. *The New England Journal of Medicine* April 16:1080-3, 1992

<sup>39</sup> Regier Darrel, Hirschfeld Robert, Goodwin Frederick, Burke Jack, Lazar Joyce, Judd Lewis. The NIMH Depression Awareness, Recognition, and Treatment Program: Structure, Aims, and Scientific Basis. *The American Journal of Psychiatry* 145(11):1351-7, 1988

## Chapter Two

### Depressive Symptomology Among Medical Students: A Review of the Literature

#### Studies of Epidemiology

In the last few decades, medical student impairment has become a topic of concern among researchers. The majority of literature on the psychiatric morbidity of medical students has focused on depressive symptomatology, the most common psychiatric complaint of this population. Few researchers have directly measured depressive symptomatology with standardized instruments. Four studies report the results of cross-sectional surveys with large enough sample sizes and response rates to accurately gauge the extent to which students suffer from such symptoms<sup>40, 41, 42, 43</sup>. In all of these studies, the Beck Depression Inventory (BDI) was used. The following is a description of the BDI and the four studies.

The BDI is a self-administered index of symptoms that is often used as a screening instrument in clinical and research settings. Two versions exist, of either 13 or 21 items. The instrument does not actually diagnose depression although the correlation between BDI ratings and clinical psychiatric ratings has been found to range from .65 to .77<sup>44</sup>. For the 21 item version, scoring indications are as follows: 1-9 = normal, 10-15 = mild

---

<sup>40</sup> Zoccolillo Mark, Murphy George, Wetzel Richard, Depression Among Medical Students. *Journal of Affective Disorders* 11: 91-6, 1989

<sup>41</sup> Vitaliano Peter, Maiuro Roland, Russo Joan, Mitchell Ellen, Carr John, Van Citters Robert, A Biopsychosocial Model of Medical Student Distress. *Journal of Behavioral Medicine*. 11(4): 311-31, 1988

<sup>42</sup> Clark David, Zeldow Peter, Vicissitudes of Depressed Mood During Four Years of Medical School. *Journal of the American Medical Association* 260(17): 2521-8, 1988

<sup>43</sup> Vitaliano Peter, Maiuro Roland, Russo Joan, Mitchell Ellen, Medical Student Distress, A Longitudinal Study. *Journal of Nervous and Mental Disease* 177(2):70-6, 1989

<sup>44</sup> Keyser Daniel, "Beck Depression Inventory," in *Test Critiques* (USA: Westport Publishers, 1985), 83-7.

depression, 16-19 = mild to moderate depression, 20-29 = moderate to severe depression, 30-63 = severe depression <sup>45</sup>. Scoring indications for the 13 item version are: 0-4 = none or minimal depression, 5-7 = mild depression, 8-15 = moderate depression, 16+ = severe depression <sup>46</sup>. Criticisms of the BDI include that the cut-off scores indicated produce a large number of false-positive results and researchers have suggested that higher cut-off scores be used <sup>47</sup>. One difficulty in interpreting the results of the following studies lies in the fact that there are no published BDI scores from the general population to use as comparison data. As noted above, the BDI correlation with clinical depression ranges from .65 to .77. The point prevalence of depression in the general population is thought to be 5-9% for women and 2-3% for men <sup>48</sup>. With these figures we can estimate in a crude manner what the BDI scores from the general population might be. It should be noted that the distinctions between depression and depressive affect or symptomatology are blurred in this literature, the terms often being used interchangeably.

In a four year longitudinal assessment of one class of medical students, Clark and Zeldow <sup>49</sup> measured depressive symptoms on six occasions. They used the 21-item BDI and had response rates of at least 70% over the six sampling times. Results included that at least 12% of the class scored 14 or above on any occasion. The lowest median BDI score occurred on the first day of school and the highest in April of the second year when 25% of students sampled had scores consistent with moderate depression (scores of 14-20 inclusive). In addition, there were 16 students who had scores of 21 or higher, and the majority (62%) of these students continued to score in this range on several assessments. Of these students with persistent symptoms, three subsequently dropped out of school.

---

<sup>45</sup> Beck Aaron, Ward C.H., Medelson M, et al. An Inventory for Measuring Depression. *Archives of General Psychiatry* 4:561-71, 1961

<sup>46</sup> Beck Aaron, Beck Roy. Screening Depressed Patients in Family Practice. A Rapid Technic. *Postgraduate Medicine* 52(6):81-5, 1972

<sup>47</sup> Zich Jane, Attkisson Clifford, Greenfield Thomas: Screening for Depression in Primary Care Clinics. The CES-D and the BDI. *International Journal of Psychiatry in Medicine* 20(3):259-77, 1990

<sup>48</sup> American Psychiatric Association. Diagnostic and Statistical Manual of Mental Disorders, 4th ed.

<sup>49</sup> Clark, Zeldow. *Vicissitudes of Depressed Mood*



This study also contained a number of other interesting findings. Surprisingly, family history of depressive disorder did not predict the severity of student's depressed mood. Alcohol consumption was not associated with higher BDI scores, and academic performance was not much worse for students with very high BDI scores than for students with scores close to the median. Lastly, there appeared to be no sex difference in propensity towards depressed mood, a very surprising result.

Vitaliano and colleagues (1988)<sup>50</sup> conducted a study of medical students that attempted to relate distress levels to a combination of factors. These factors were the student's exposure to stressors, psychological vulnerability and the presence of psychological and social resources. Distress was measured using the 13 item BDI, Symptom Checklist Anxiety Scale and Reeder Daily Stress scale. Two consecutive classes of students were sampled at the beginning and end of their first year and the results analyzed in combination (N=312, 89% response rate). Mean anxiety levels were found to be one standard deviation above means for normal non-patients and daily stress levels increased during the year. Regarding BDI scores, the total number of scores indicating any level of depressive symptomology doubled between Sept. and May, from N = 36 to N = 78. For men, the percentage of students in the mild, moderate and severe categories were as follows: 6.2, 3.6, 0% in Sept. and 15.4, 6.1 and .5% in May. For women the percentages were 9.3, 6.4, 0% in Sept. and 20.4, 10.2 and 1.8% in May. For this study a combined distress index fashioned from the three indexes and related to student psychological profiles. Distress was found to be positively correlated to wishful thinking, avoidance, self-blame and Type A behavior.

Zoccolillo et al.<sup>51</sup> sampled 304 out of 384 first and second year students, administering the 21 item BDI every month. They then attempted to secure a clinical diagnosis of students using the NIMH Diagnostic Interview Schedule. All students with BDI scores over nine

---

<sup>50</sup> Vitaliano et al., A Biopsychosocial Model

<sup>51</sup> Zoccolillo, Murphy, Wetzel, Depression Among Students

on any occasion were interviewed with the DIS. A control group of students who never scored above 9 on the BDI were also interviewed. A clinical diagnosis of depression or probable depression was given to students who qualified, based on DSM-III criteria. Probable depression was defined as sustained depressed mood plus 3 of 4 DSM-III criteria for depression, or a judgment by the student that symptoms did not interfere with activities and/or they did not seek help. Overall assessment of BDI results showed that 22% of students scored over 9 on the BDI at some time during the two years. 112 students were interviewed, 63 with BDI over 9 and 59 without. Of those students interviewed, 26 met diagnostic criteria for either major depression or probable major depression. This represents 8.6% of all students. Of these 26, 3 were from the control group indicating that a BDI score of 9 was a fairly accurate measure of depression status. Regarding risk factors for depression, women were significantly more likely to be depressed than men, and a history of depression before medical school was a very strong risk factor for becoming depressed during school (relative risk = 25). 43% of the students identified as being currently depressed had not sought treatment and 17% had delayed seeking treatment for at least a month. The two most prominent reasons for this were a belief that depression was normal during medical school, and also an inability to find time to seek help. In this sample, two students left school because depression interfered with their ability to function. Concerns regarding this study include the possible bias due to the voluntary selection of participants.

Vitaliano et al. (1989)<sup>52</sup> conducted a longitudinal study of first year students measuring anxiety and self report of depression. Psychological properties were also measured and included coping strategies, type A behavior, anger expression and satisfaction with social support. Students were surveyed in September and May. This paper is essentially an extension of the study noted above (Vitaliano et al.). New findings include an analysis of

---

<sup>52</sup> Vitaliano et al., Medical Student Distress

how students changed over the year. Type A behavior and anger expression were related to initial distress levels and this did not change over the year. Avoidance and self-blame did increase while both problem-focused coping and social support seeking activity decreased. In May, distress was higher for women than for men and was related to the same variables as in Sept. (Type A behavior, anger suppression and emotion based coping strategies). It is important to note that life events did not predict distress and that distress was enduring over the year for many students.

Other studies with cross-sectional measurements of medical student distress levels exist. Although the great majority of these are methodologically flawed, often displaying selection bias and low response rates, they raise important questions in a field where little research exists. One such study by Lloyd and Gartrell<sup>53</sup> measured psychiatric symptomatology among self-selecting students from all classes with a response rate of less than 50%. Students were asked to rate and identify sources of stress, and psychiatric symptoms were measured using the Hopkins Symptom Checklist (HSCL). Results include the following: General distress levels for medical students as measured by HSCL fell between those of the general population and psychiatric patients. In particular, mean scores for depression and anxiety symptoms were one standard deviation above means for the general population. Women students were more likely than male students to experience high symptom levels, especially of depressive symptoms.

In order to truly address the question of whether medical students comprise a group at high risk for depression, information on the expected levels of depressive symptoms in this age group need to be obtained. Unfortunately, there is very little literature on the depression rates or BDI scores for nonmedical students in this age group. A study of diagnoses from a university psychiatric clinic demonstrated that 6.6% of the patients seen were diagnosed

---

<sup>53</sup> Lloyd Camille, Gartrell Nanette. Psychiatric Symptoms in Medical Students. *Comprehensive Psychiatry* 25(6):552-65. 1984

with major depression <sup>54</sup>. While this information is somewhat informative, it does not provide clues as to what the expected baseline rate of depression in this age group might be. As mentioned earlier, the point prevalence of major depression among the general adult population is reported to be 5-9% for women and 2-3% for men <sup>55</sup>.

## **Risk Factors for Depressive Symptomatology**

### Gender

One of the most consistent findings regarding risk factors for depressive mood among medical students is that female students are significantly more likely to be distressed than their male counterparts. Several studies report a gender difference in symptom rates <sup>56,57, 58, 59, 60</sup> while only one study reports no such difference <sup>61</sup>. Anxiety rates have also been noted to be higher among female students <sup>62, 63</sup>. In addition, female medical students have been found to be at higher risk for eating disorders, with depression cited as a risk factor for these disorders <sup>64</sup>. The question remains as to whether the higher levels of depression among female students are simply a reflection of the fact that women in the general

---

<sup>54</sup> Stangler Ronnie, Printz Adolph. DSM-III: Psychiatric Diagnosis in a University Population. *American Journal of Psychiatry* 137(8):937-40, 1980

<sup>55</sup> American Psychiatric Association. Diagnostic and Statistical Manual of Mental Disorders, 4th ed.

<sup>56</sup> Vitaliano et al., A Biopsychosocial Model

<sup>57</sup> Lloyd Camille, Gartrell Nanette. Sex Differences in Medical Student Mental Health. *American Journal of Psychiatry* 138(10):1346-51, 1981

<sup>58</sup> Hendrie Hugh, Clair Donna, Brittain Harry, Fadul Pamela. A Study of Anxiety/Depressive Symptoms of Medical Students, House Staff and Their Spouses/Partners. *Journal of Nervous and Mental Disease* 178(3):204-7, 1990

<sup>59</sup> Herzog David, Borus Jonathan, Hamburg Paul, Ott Ingrid, Concus Adriane. Substance Use, Eating Behaviors and Social Impairment of Medical Students. *Journal of Medical Education* 62(Aug):651-57, 1987

<sup>60</sup> Lloyd Camille. Sex Differences in Medical Students Requesting Psychiatric Intervention. *Journal of Nervous and Mental Disease* 171(9):535-45, 1983

<sup>61</sup> Clark, Zeldow. Vicissitudes of Depressed Mood

<sup>62</sup> Lloyd, Gartrell. Sex Differences in Medical Student Mental Health

<sup>63</sup> Hendrie et al., A Study of Anxiety/Depressive Symptoms

<sup>64</sup> Herzog et al., Substance Use

population have depression rates twice those of men <sup>65</sup>, or whether there is also a precipitating factor in medical school that disproportionately creates distress among women. Two studies address this question specifically and will be discussed below.

A 1981 longitudinal study of sex differences in medical student health <sup>66</sup> (60% overall response rate) found that women were as well adjusted as men in terms of ego resiliency, psychiatric symptoms and life satisfaction at the beginning of their first school year. At the middle of the year however, women had higher levels of depression and anxiety symptoms. They remained more depressed than men at the end of the year but their ego resiliency had not changed. Thus, women had an increase in state-dependent but not trait-dependent symptoms, this points toward environmental stresses as the cause of distress. The authors note that female students may experience role conflict with societal expectations for women. In addition, they experience discrimination and a lack of support systems and role models. It can be reasoned that such environmental stresses would disproportionately cause distress among female students. A more recent (1990) study of students seeking psychiatric treatment <sup>67</sup> found that more women than men sought treatment. Of those students seeking help, women were more likely to report lack of familial support for their career choice and to struggle with the dual roles of student and care provider (for husbands or children). It was felt that these pressures were the cause of help-seeking behavior among female students. Although this study only included students who sought treatment it may be reasonable to assume that these pressures are also more prevalent among women students in general.

---

<sup>65</sup> Weissman Myra, Klerman Gerald. Sex Differences and the Epidemiology of Depression. *Archives of General Psychiatry* 34:98-111, 1977

<sup>66</sup> Lloyd, Gartrell. Sex Differences in Medical Student Mental Health

<sup>67</sup> Dickstein Leah, Stephenson Judith, Hinz Lisa. Psychiatric Impairment in Medical Students. *Academic Medicine* 65(9):588-93, 1990

### Other Demographic Risk Factors

If social stress can precipitate or cause depressive symptoms, it may follow that students who are members of ethnic or sexual orientation minorities, or who have low socioeconomic status will experience high distress rates. Unfortunately, research documenting or refuting this assumption is sparse. One study that addresses the issue<sup>68</sup> followed black and Hispanic students who were involved in a pre-medical school enrichment program and compared them to white students at the same medical school. The authors note that in the general population, non-white ethnic minorities tend to have lower socioeconomic status than whites, and that low SES is in turn linked to mental health problems. In addition it is known that ethnic minority medical students report more stress than white students in terms of financial difficulties, poor academic preparation, discrimination and lack of role models<sup>69</sup>. It was thought that the minority students in this study would enter with psychosocial assets derived from the enrichment program but the question remained whether these assets would be short lived or enduring. A number of parameters were measured including social support, self-esteem, anxiety, locus of control, alcohol consumption, depressive symptoms and hostility. (Locus of control is spoken of as being internal or external, and refers to where an individual attributes responsibility for their personal state of being. If a person who feels helpless or feels controlled by outside events would be said to have an external locus of control, while someone who feels that their actions have personal consequences has an internal locus). Questionnaires were given to the students upon entrance to school and at the end of one year of training. Results showed that there were no differences in mental health at the beginning of the school year or at the end. However, minority students had increased levels of external locus of control after one year, black students had increased hostility and Hispanic students had increased alcohol consumption. The interpretation of these results is problematic in that

---

<sup>68</sup> Pyskoty Charlene, Richman Judith, Flaherty Joseph. Psychosocial Assets and Mental Health of Minority Medical Students. *Academic Medicine* 65(9):581-5, 1990

<sup>69</sup> Strayhorn Gregory. Social Supports, Perceived Stress and Health: The Black Experience in Medical School-A Preliminary Study. *Journal of the National Medical Association* 72(9):869-881, 1980

there was no control group of minority students without participation in the enrichment program. It is difficult to know then, what the effect of the program was. The authors state that formal support networks for minority students are essential to the students' well being. Obviously, further research is needed to understand the experience of minority students. A discussion of medical school stress, including abuse, discrimination and harassment will be taken up in chapter 3.

## **The Effects of Depression on Medical Students**

### Academic performance

Discussions of the effects of depression on medical students often gravitate to evaluations of academic performance in an effort to find correlations between symptoms and poor grades. There is conflicting evidence of such a relationship. Whitney and colleagues<sup>70</sup> report a correlation among freshman undergraduates between symptomology and low grade-point averages, while a study of first and second year medical students<sup>71</sup> found that while students scoring over 21 on the BDI were the most likely to drop out of school, they did so in good academic standing. Clark et al.<sup>72</sup> noted no correlation between depression and poor grades in a 4 year longitudinal study. The implication of these findings is that schools cannot rely on academic performance to gauge student mental health.

### Suicide

There is a strong relationship between suicide and depression, it has been estimated that as many as 80% of people committing suicide are depressed<sup>73</sup>. The incidence of suicide

---

<sup>70</sup> Whitney William, Cadoret Remi, McClure James. Depressive Symptoms and Academic Performance in College Students. *American Journal of Psychiatry* 128(6):766-70, 1971

<sup>71</sup> Clark. Zeldow. Vicissitudes of Depressed Mood

<sup>72</sup> Clark David, Daugherty Steven, Zeldow Peter, Gotterer Gerald, Hedeker Donald. The Relationship Between Academic Performance and Severity of Depressed Mood During Medical School. *Comprehensive Psychiatry* 29(4):409-20, 1988

<sup>73</sup> Nolen-Hoeksema. Sex Differences in Depression. (Stanford: Stanford University Press, 1990) 35.

among medical students and physicians is of real concern, suicide is the second most common cause of death among medical students <sup>74</sup>. Evidence is conflicting as to whether male doctors and medical students are at increased risk for suicide relative to the general population. One study reports that male physicians are slightly more likely to commit suicide than their agemates in the general population <sup>75</sup>. Female physicians have been found to commit suicide three to four times as often as age matched controls <sup>76,77</sup>, and female medical students have a similar increased risk <sup>78</sup>. Depression in medical students has been found to be linked to both suicidal ideation and action <sup>79,80</sup>.

A handful of researchers have studied suicide in discrete populations of medical students and physicians. In a 1977 survey of all 116 medical school, Pepitone-Arreola-Rockwell et al. <sup>81</sup> reported that 52 student suicides occurred in the period 1970-78. Several facts are noteworthy regarding these deaths. The suicides tended to cluster in the November to January period which is the time period of lowest frequency for the general population. 75% of the suicides were committed by second or third year students and the second year class was found to be at highest risk, paralleling the increased risk for depression in that group. The most striking finding from this study was that while the suicide rate for men was slightly below that of agemates in the general population, the rate for women students was three-four times higher than for agemates in the general population.

---

<sup>74</sup> Roy Alec, Suicide in Doctors. *Psychiatric Clinics of North America* 8(2):377-87, 1985

<sup>75</sup> Steppacher Robert, Mausner Judith, Suicide in Male and Female Physicians. *Journal of the American Medical Association* 228(3):323-8, 1974

<sup>76</sup> Steppacher, Mausner, Suicide in Male and Female Physicians

<sup>77</sup> Craig Alan, Pitts Ferris, Suicide by Physicians. *Diseases of the Nervous System* 29(11):763-72, 1968

<sup>78</sup> Pepitone-Arreola-Rockwell Fran, Rockwell Don, Core Nolan, Fifty-Two Medical Student Suicides. *American Journal of Psychiatry* 138(2):198-201, 1981

<sup>79</sup> Okasha A., Lotaif F., Sadek A., Prevalence of Suicidal Feelings in a Sample of Non-Consulting Medical Students. *Acta Psychiat Scand* 63:409-15, 1981

<sup>80</sup> Epstein Lynn, Thomas Caroline, Shaffer John, Perlin Seymour, Clinical Prediction of Physician Suicide Based on Medical Student Data. *Journal of Nervous and Mental Disease* 156(1):19-29, 1973

<sup>81</sup> Pepitone-Arreola-Rockwell et al., Fifty-Two Suicides



There is evidence that doctors who commit suicide are often troubled by depression or substance abuse <sup>82</sup>. An extensive literature review by Ross concluded that up to 75% of physicians who commit suicide may be depressed. In addition, it was found that 40% of U.S. physician suicides are likely to be associated with alcoholism and 20% with the abuse of other drugs <sup>83</sup>.

Regarding medical students, few studies exist which examine suicide. A one year prevalence study of 516 medical students by Okasha and colleagues <sup>84</sup> reported a relationship between suicidal feelings and symptoms suggestive of depression. Epstein et al. <sup>85</sup> conducted a unique retrospective study in which it was shown that depression during medical school was a strong predictor of future physician suicide. Risk factors other than depression have also been examined in medical students. Graves and Thomas <sup>86</sup> showed that students who reacted to stress in medical school by becoming irritated were more likely to later commit suicide. A study of graduating medical students by Schwartz et al. <sup>87</sup> reported that students who would have pursued a career in artistic or literary fields had they not attended medical school were over three times more likely than other students to have seriously considered suicide during their training. They were also more likely to have sought psychiatric treatment during school and had a higher level of disillusionment with their choice of career.

---

<sup>82</sup> Roy, Suicide in Doctors

<sup>83</sup> Ross Mathew, Suicide Among Physicians. *Psychiatry in Medicine* 2(3):189-98, 1971

<sup>84</sup> Okasha et al., Prevalence of Suicidal Feelings

<sup>85</sup> Epstein et al., Clinical Prediction

<sup>86</sup> Graves Pirkko, Thomas Caroline. Habits of Nervous Tension and Suicide. *Suicide and Life-Threatening Behavior* 21(2):91-105, 1991

<sup>87</sup> Schwartz A., Swartzburg M., Lieb J., Slaby A. Medical School and the Process of Disillusionment. *Medical Education* 12(3):182-5, 1978

## Conclusions

Despite the sparse nature of research on medical student depression, several conclusions can be noted. The time of highest risk for depressive symptoms in medical students is during the end of the second year of school. One study found that in April as many as 25% of second year students qualified as moderately depressed by BDI measurement. Also of note is the fact that distress is enduring for many students and may lead to withdrawal from school. With regard to certain populations of students, women medical students are much more likely than their male counterparts to experience depressive symptoms. The reasons for this are difficult to ascertain at this point, although women are known to be more likely to experience depression in general. Female students may experience low levels of family support, and may have increased burdens outside of school due to the dual roles of student and caretaker. In addition, women may be more likely to experience discrimination and harassment within school.

Students who are experiencing depressive symptoms may not be drawing attention to themselves; academic performance does not correlate with symptomatology or distress. However, suicide is strongly associated with depression. It is not clear whether doctors and medical students in general are at an increased risk of suicide, however it is quite clear that female doctors and students are at dramatically increased risk. In particular, suicide rates for female medical students are three to four times that of age matched controls. Suicide is the second most common cause of death among medical students and suicidal action and ideation has been correlated to depression in this population. Students are most likely to commit suicide at the end of their second year which is also the time when they are most likely to experience depressive symptoms.

The need for more research in this area is clear, as is the need for intervention in the form of counseling and education. These topics will be discussed in the following chapters. Particular research questions that have yet to be addressed include the following: If we accept that medical students are at increased risk for depression, is this due to stress within school or is there a selection bias for students with depression potential? Are there demographic features that identify students at increased risk for depression? For example, do parameters such as ethnic identity, social class or sexual orientation predict depression? Is the medical school environment particularly alienating to certain students? Are there stresses within the educational process that are unnecessary? How ready are students, faculty and administration to approach this issue? Are students seeking counseling or are they communicating their distress in some other way? These and other questions are of importance not only to medical students but also to the medical and educational communities in general. In addition, the quality of care that can be offered by depressed physicians is obviously not optimal and so medical school is a unique time in which to either prevent illness or establish treatment plans before these young doctors become distressed caregivers.

## Chapter Three

### The Stresses of Medical Education

#### Introduction

Few would argue with the assertion that medical school is stressful. Students must master an extraordinary amount of material, learn to speak a new language of technical terms, become proficient at physical examination skills, assume partial responsibility for patient care and adjust to constantly being in the presence of illness and death. This is a substantial task, especially for those going through the developmental processes of young adulthood. Students can easily feel that they are not able to accomplish what is asked of them and they can develop a sense of failure even when progressing satisfactorily.

Each year of medical school has unique stresses. The first two years, known as the pre-clinical years are classroom based and focus on basic medical science with little clinical correlation. There is an enormous amount of information to be processed, usually delivered in lecture format, and the student must learn to adjust to this load by making decisions about what material is most important to study. Students with obsessive-compulsive tendencies have difficulties with this task and often feel a need to study everything in detail. Others students may have difficulties adjusting to the fact that for the first time in their academic career they may not be at the top of their class. The third and fourth years of medical school are in sharp contrast to the preceding two. Here the process is much more akin to an apprenticeship where the student learns to examine patients and to take on responsibilities as part of the clinical team. Common stresses at this phase are the difficulties of assuming the role of a care provider without the knowledge or confidence that come with experience. Many students have difficulty adjusting to the intimacy with

patients that is needed in order to care for them. In addition, the student must perform procedures on patients in order to become proficient at these skills. This often involves inflicting pain with the knowledge that the patient is not benefiting from the student's educational process. Given that the process of training to become a doctor has inherent stresses, how much of the actual distress felt by students is necessary? Are there ways to lessen the difficulties and make the process more compassionate?

The relationship between stress and mood disorders is complicated, no definitive cause and effect models exist. However, there is an association between stressful life events and the onset of depression<sup>88</sup>. In addition, it seems logical that generalized stress levels may hinder the resolution of depressive illness. Thus, an exploration of stress among medical students seem relevant to the discussion of depression even if a direct connection is not delineated. Psychosocial stress can result in poor health and it does so with an inverse relation to the social support available<sup>89</sup>. In other words, a challenging situation may not result in distress if the individual has adequate resources and support with which to address it. If medical students are experiencing stress it may be because they are not receiving adequate support. This chapter will focus of the stresses of medical education and their mental health consequences. In this literature, stress levels are assessed subjectively utilizing a wide variety of instruments. These results should be considered valid as self-report stress measurements are the most reliable methods of assessment<sup>90</sup>.

---

<sup>88</sup> Rabkin Judith, "Stress and Psychiatric Disorders," in The Handbook of Stress, eds. Leo Goldberger, Shlomo Breznitz (New York: The Free Press, 1993), 489.

<sup>89</sup> Strayhorn Gregory, Social Supports, Perceived Stress, and Health

<sup>90</sup> Derogatis Leonard, Coons Helen, " Self-Report Measures of Stress," in The Handbook of Stress, eds. Leo Goldberger, Shlomo Breznitz (New York: The Free Press, 1993) 201.

## Academic Stress

As with depressive symptoms and anxiety, evidence that medical students have stress levels higher than the general population exists<sup>91</sup>. The most common source of stress for students regardless of gender and ethnicity appears to be academic demands<sup>92</sup>. In particular, stress over exams and grades<sup>93</sup> is common as is the concern of not being able to absorb the required material<sup>94</sup>. Distress over a perceived overabundance of material lacking clinical relevance and an emphasis on memorization is also common<sup>95</sup>. In addition, poor communication with faculty along with perceived unsatisfactory methods of instruction and evaluation have been reported as significant<sup>96</sup>. A generalized fear of academic failure was reported to be the most significant stressor for first year students at a Canadian medical school<sup>97</sup>, followed by factors relating to lack of social contacts. Possible sources of stress that were not reported as significant included dissection of cadavers and examining patients.

A pervasive fear of academic failure may have important consequences in lowering students' self esteem and fostering feelings of inadequacy. These in turn can have negative effects on professional performance. Lloyd<sup>98</sup> notes that academic concerns were the most common presenting complaints of medical students seeking psychiatric help and posits that

---

<sup>91</sup> Firth Jenny, Levels and Sources of Stress in Medical Students. *British Medical Journal* 292(6529): 1177-80, 1986

<sup>92</sup> Notman Malkah, Salt Patricia, Nadelson Carol, Stress and Adaptation in Medical Students: Who is Most Vulnerable? *Comprehensive Psychiatry* 25(3): 355-66, 1984

<sup>93</sup> Lloyd Camille, Gartrell Nanette. A Further Assessment of Medical School Stress. *Journal of Medical Education* 58(12):964-7, 1983

<sup>94</sup> Miller Grant, Miller Elizabeth, Peck Owen, Medical Student Needs Assessment and Student Affairs Programming. *Journal of Medical Education* 56(6): 518-20, 1981

<sup>95</sup> Strayhorn Gregory, Effect of a Major Curriculum Revision on Students' Perceptions of Well-Being. *Academic Medicine* 64(1):25-9, 1989

<sup>96</sup> Strayhorn, Effect of a Major Curriculum Revision

<sup>97</sup> Coburn David, Jovaisas Al, Perceived Sources of Stress Among First-Year Medical Students. *Journal of Medical Education* 50(6):589-95, 1975

<sup>98</sup> Lloyd Camille. Sex Differences in Medical Students Requesting Psychiatric Intervention.

academic stress is often either a causative or precipitating factor for psychiatric distress among students. Even if academic stress does not present as psychiatric illness per se, there may be considerable damage done to the students' self-esteem during training. Students in a discussion project at a large public medical school<sup>99</sup> reported fears of inadequacy related to the amount of material to be learned. These fears were amplified in the presence of senior students or faculty who had obviously been able to master the curriculum. Also expressed was a sense of powerlessness to change the system and a feeling that they had regressed into a rigid high school-like environment in contrast to other graduate students who were taking on academic responsibility. If a student feels a sense of failure but yet perceives that others are managing well, the temptation to "fake it" may arise. This may be especially true if admission of difficulty is met with ridicule or disgust. The ramifications for patients and other colleagues from a coping strategy based on dishonesty are very disturbing to contemplate.

Academic demands no doubt play an important role in student distress. The question then is, can material be presented and learned in a more humane way so as to ameliorate the stresses? The following is a discussion of one such approach to curricular reform.

### Curriculum and Student Well-Being: The Case for Problem-Based Learning

How successfully a student adapts to the medical school environment can have important consequences in later professional performance. While this may seem obvious, in general, little attention is given to how students react to the rigid medical education system. While it is generally acknowledged that over the past few decades there has been an explosion in the amount of material to be learned, the format and style of teaching has not adapted to reflect this. In addition, medical education has been slow to respond to advances in theories of

---

<sup>99</sup> Rosenberg Pearl. Students' Perceptions and Concerns During Their First Year in Medical School. *Journal of Medical Education* 46(3):211-8, 1971

adult education. An exception to this general rule are the experiments with problem-based learning (PBL).

The problem-based learning format emphasizes student-initiated problem-solving within a small group. First established within medical education at McMaster University in 1968, it is based on the concept that relevance in education refers not only to the content of material but also to the process by which it is learned. As such it requires student responsibility and self-direction <sup>100</sup>. Proponents of the PBL format emphasize that student involvement is critical to learning and student satisfaction. This format also teaches students the lifelong skills of how to work with others, generate learning issues and practice research skills. Perhaps especially today, it is essential that medical students become "self-motivated learners and competent problem solvers in order to keep abreast of new information" <sup>101</sup>. A traditional lecture-based format does not accomplish this task.

In 1981, the Association of American Medical Colleges issued a report recommending that medical schools attempt to emphasize the development of skills rather than the retention of facts and to maximize active rather than passive learning opportunities <sup>102</sup>. Medical schools have reacted to varying degrees to this suggestion. The University of North Carolina revised its entire curriculum between 1981 and 1984, reflecting an approach to learning in keeping with the PBL format <sup>103</sup>. A study was undertaken to document whether students' well-being was affected by the change <sup>104</sup>. First-year students enrolled two years after the curriculum revision were compared to those one year before the change.

---

<sup>100</sup> Moore-West Maggie, Regan-Smith Martha, Dietrich Allen, Kollisch Donald, "Innovations in Medical Education." in Educating Competent and Humane Physicians (Bloomington: Indiana University Press, 1990), 142.

<sup>101</sup> Moore-West et al., Educating Physicians 141.

<sup>102</sup> Muller S., Physicians for the Twenty-First Century. Report of the Project Panel on the General Professional Education of the Physician and College Preparation for Medicine. *Journal of Medical Education* 59(Nov), 1984 as cited by Gregory Strayhorn, Effect of a Major Curriculum Revision on Students' Perceptions of Well-Being. *Academic Medicine* 64(1):25-9, 1989

<sup>103</sup> Strayhorn, Effect of a Major Curriculum Revision

<sup>104</sup> *Ibid.*



The experiment was conducted simultaneously at another medical school without a change in teaching format to control for any differences between the earlier and later students that were not related to the new curriculum. It was found that UNC students surveyed after the curriculum change reported more enthusiasm and interest on the part of both students and faculty to academic endeavors. In short, the learning environment was experienced as better by these students than by the UNC students before the revision. In addition, the students in the new curriculum reported a significantly greater sense of well being, less depressive symptomology and less anxiety. There was also a non-significant trend for the later students to report fewer stresses. In contrast, students at the comparison school reported a decline in the quality of the learning environment, higher stress levels and a lower level of mental well-being. These findings are important and may encourage other institutions to revise learning strategies. Replication of the study would be of interest as well. There is one other study <sup>105</sup> which attempts to document whether students in a PBL environment have lower levels of depressive symptomology than similar students in a lecture-based format . However, the results are inconclusive due to a selection bias: Students in the PBL situation had a lower likelihood of depressive symptomology 3 months into their school year than students in a lecture based curriculum. But, students were picked for the PBL curriculum because they demonstrated interest in it, and thus they may differ from other students in many respects. Because these differences were not controlled for, these results may not be valid.

---

<sup>105</sup> Camp Lawrence, Hollingsworth Merris, Zaccaro Daniel, Cariaga-lo Liza, Richards Boyd. Does a Problem-based Learning Curriculum Affect Depression in Medical Students? *Academic Medicine* 69(10, suppl.): 525-7, 1994

## The Need for Other Curricular Reforms

After academic concerns, the most significant stressor for students is a lack of time to pursue other interests and social relationships <sup>106,107</sup>. Flexibility in the curriculum format to accommodate variation in students' needs could aid in fostering student well-being. The option of having more time to complete the traditional four year schedule would allow students the opportunity to develop or sustain other interests, spend time with families or partners, or take on part-time employment. These other concerns, when not met lead to frustration but when attended to enhance self-esteem, independence and the attainment of developmental tasks of identity, intimacy and independence <sup>108</sup>. In addition, a non-stigmatized way of receiving counseling or of taking time off to attend to other needs is critical <sup>109</sup>.

The need to search for ways to relieve time pressure are of particular importance to today's students who need to grapple with information on an unprecedented scale. It is important for educators to help students delineate what concepts and facts are most important to learn, and to remove non-critical information from the curriculum. Many students experience a great amount of anxiety around setting limits on their studying. The following quote illustrates this predicament:

The nature of the material to be learned and the life and death ethos place the learner in a position of great stress. Students must learn all the important material or be found wanting, guilty perhaps someday of contributing to

---

<sup>106</sup> Lloyd, Gartrell, A Further Assessment

<sup>107</sup> Coburn, Jovaisas, Perceived Sources of Stress

<sup>108</sup> Pfeiffer Roxane, Early-Adult Development in the Medical Student. Mayo Clinic Proc. 58(2): 127-34, 1983

<sup>109</sup> Pfeiffer, Early-Adult Development

someone's demise because of intellectual laziness. The knowledge is the key and the pursuit is never-ending; time spent on things other than acquiring this knowledge or applying it is somehow useless and provokes a sense of guilt in importance to the monarchy of medicine <sup>110</sup>.

It is unhealthy for students to be anxiety-ridden about studying and for their lives to be wholly contained within medical school. These young adults should be encouraged to develop relationships and interests outside of medicine that allow them to grow as individuals. However, encouragement of this kind is only helpful if the educational system is set up to allow students time for other activities. As noted by some who comment on medical education, although the amount of information in the preclinical curriculum has increased dramatically since 1910, the time allotted for students to learn it has not changed <sup>111</sup>. In fact, the structure and format of medical education has been a tribute to rigidity, based as it is on models derived in the early 1900s <sup>112</sup>. Critics warn of the pressures placed on students who are asked to digest ever increasing amounts of information <sup>113</sup>:

"The amount of information that a student can assimilate in two preclinical years cannot escalate forever; to ignore the student's limitation in this regard is to model inhumane expectations. Either educators must make a greater effort to set priorities regarding the information that students are required to learn or the time available to the students to master the scientific base of medicine will have to be lengthened."

---

<sup>110</sup> Bulger Roger. "The Impact of the Educational System on the Development of the Modern Hippocrates." in Educating Competent and Humane Physicians (Bloomington: Indiana University Press, 1990), 85-6.

<sup>111</sup> Lloyd Camille, Gateley Ann, "Facilitating Humaneness in Medical Students and Residents." in Educating Competent and Humane Physicians (Bloomington: Indiana University Press, 1990), 97.

<sup>112</sup> Moore-West et al., Educating Physicians 142.

<sup>113</sup> Lloyd, Gateley, "Facilitating Humaneness." in Educating Competent and Humane Physicians

The author goes on to note that while there may be many students who have little difficulty in mastering the required material in the time normally allotted, variations in learning styles and rates exist. Medical schools as a rule are rigid in requiring students to complete coursework at the same rate, this lack of ability to accommodate to variety in students' needs undoubtedly leads to distress for some.

Over the first year of school, students have been shown to have a decrease in leisure activity, sleep, physical activity, general health and an increase in perceived stress <sup>114</sup>. This negative correlation between leisure activity and stress levels was reaffirmed in another study of freshman students <sup>115</sup>. It is unlikely that these trends are productive, a person cannot be a good clinician without a knowledge of themselves and participation in intimate and productive relationships.

### **Young Adult Development in the Medical Student**

The most instructive way to view medical student stress is to consider the interaction of the demands of the environment and the abilities of the subject. Specifically, to identify what tasks the student is trying to accomplish and with what skills. Distress will occur when there is a poor match between the task and the tools available. When viewed within the framework of developmental tasks, certain aspects of medical training stand out as being of particular importance to professional and personal growth. They also stand out as common areas of developmental failure where students develop maladaptive behavioral patterns.

---

<sup>114</sup> Wolf Thomas, Kissling Grace. Changes in Life-Style Characteristics, Health, and Mood of Freshman Medical Students. *Journal of Medical Education* 59(10):806-14, 1984

<sup>115</sup> Folse M., DaRosa Debra, Folse Roland. The Relationship Between Stress and Attitudes Toward Leisure Among First-Year Medical Students. *Journal of Medical Education* 60(8):610-17, 1985

The majority of medical students enter training in early adulthood. In Erikson's schema of psychosocial development <sup>116</sup> the young adult years center around resolving the conflict between intimacy and isolation while the middle adulthood years are the stage for resolving the crisis between generativity and stagnation. For the young adult, intimacy involves the formation of close friendships characterized by spontaneous and meaningful interpersonal communication. The ability to form intimate connections and partnerships with others demands that the individual have established a strong self-identity. Those who do not have a strong sense of themselves retreat to isolation and avoid situations that would invite true intimacy. The task of middle adulthood is generativity, characterized by the ability to be work with concern for and guidance of the next generation, rather than self-absorption and stagnation.

In addition to these normal developmental hurdles, medical students face developmental tasks inherent to their professional development. Foremost among these is the challenge of being in the presence of illness and death without withdrawing emotionally, which can only be accomplished by those who are successfully negotiating the tasks of normal development. The stresses of medical school may interfere with or interact in unforeseen ways with the normal tasks of young adulthood. Stressors that may delay development include academic pressure, the state of dependency inherent in formal education and lack of time for commitments to others <sup>117</sup>. Particular tasks at hand include the development of a strong and resilient sense of self-identity and the establishment of both intimate relationships and a sense of independence. These are all of critical importance for the student's personal and professional development. It is unfortunate that there is little emphasis in medical education on how the student and doctor's emotional development affects the quality of patient care they can offer.

---

<sup>116</sup> Erikson Erik. *Identity and the Life Cycle*. (New York: W.W. Norton and Co., 1980) p.100-4

<sup>117</sup> Gaensbauer Theodore, Mizner George. *Developmental Stresses in Medical Education*. *Psychiatry* 43(1): 60-70. 1980

A strong sense of self-identity is of paramount importance to establishing meaningful relationships with others, both in professional and personal settings. A student who has in college developed a sense of identity by consistently attaining high grades may be devastated by a middle-range score on a medical school exam. This may cause feelings of anxiety and self-doubt and the student may withdraw, delaying the ability to develop close ties to others <sup>118</sup>. At this time the student must adjust to the new standards of performance required in medical school and gauge success not by grades but by how well the performance reflects his or her abilities. If this is not done, a lost sense of competence can lead to depression and anxiety <sup>119</sup>.

In addition to a sense of self, the development of close ties to others requires time and effort. Students who are unable to limit their study time due to the enormous study load of medical school will be unable to invest in personal relationships. For some, the chance to become immersed in study may be a safe way to avoid intimate relationships. Others may attempt to form social ties but be frustrated by the limited time available to do so. In either setting, the resultant isolation is unhealthy and delays true adult development. Another unfortunate turn of events occurs when students seek out partners who provide emotional support in trying times but with whom they have little in common. These relationships may be comfortable for a time but there can be no true growth when partners cannot communicate meaningfully and challenge each other. A similar unhealthy setting occurs when students move back in with their parents for financial or emotional support <sup>120</sup>.

The prolonged dependency of the medical student, both financial and professional is an uncommon situation for young adults and may force a return to the state of adolescence

---

<sup>118</sup> Pfeiffer, Early-Adult Development

<sup>119</sup> Gaensbauer, Mizner, Developmental Stresses

<sup>120</sup> Pfeiffer, Early-Adult Development

where tasks of self-identity and independence are paramount. This in turn can cause despair and frustration in the student. In addition, the sharp juxtaposition of this sense of dependency and self-doubt with the role of a caretaker who is responsible to other's lives can be psychologically disorganizing.

In a more general sense, students who have not had time to develop their own sense of identity and purpose cannot be good clinicians, their only mechanism for dealing with the suffering of their patients is denial, for they have no experience from which to offer compassion. Providing care for the sick and interacting with their families is an act of intense intimacy. Students who are not able to maintain truly intimate relationships will fail at this juncture, they will react by becoming detached and overly clinical. This detachment from the experience of clinical work is illustrated in this quote from Renee Fox <sup>121</sup> regarding medical students and house staff:

As they struggle, individually and collectively, to manage the primal feelings, the questions of meaning, and the emotional stress that the human condition and uncertainty aspects of their training evoke, medical students and house staff commonly develop certain ways of coping with them. Foremost among these socially patterned defense mechanisms are distancing themselves from their own feelings and from their patients through intellectual engrossment in the biomedical challenges of diagnosis and treatment...

Suppressing an emotional reaction to the pain of illness or the intimacy of patient contact has consequences for both student and patient. The patient is not served well by a clinician incapable of empathy and the student develops a pattern of detachment from emotion which

---

<sup>121</sup> Fox Renee. "Training in Caring Competence." in Educating Competent and Humane Physicians (Bloomington: Indiana University Press, 1990), 205.

can result in isolation <sup>122</sup>. While some degree of detachment is necessary in order to study disease, problems arise when the detachment is overwhelming and the student loses the capacity to feel, or becomes dehumanized. If a student cannot find a sense of emotional balance, then hypochondriacal preoccupations or anxiety may result from exposure to disease <sup>123</sup>. A related task for the student on clinical rotations is the need to accept death and its inevitability. A sense of helplessness may overcome the student in these situations. Or, the student may become fascinated with heroic interventions and attempt to force them on the patient <sup>124</sup>.

### **The Experience of Women and Minorities**

Female medical students have been shown to have higher stress levels than their male counterparts <sup>125</sup>, and as noted in the previous chapter they have higher rates of depressive symptomology and suicide. The reasons for this are multifactorial, and unfortunately have not been researched extensively. Although women may enter medical school with equally strong personality resiliency and life satisfaction, they experience higher levels of depressive and anxiety symptoms and report lower life satisfaction than do male students <sup>126</sup>. These changes can occur as early as the middle of the first year. One possible explanation for this lies in the fact that medical school reflects society as a whole which arguably discriminates against women in both overt and subtle ways. This may be exaggerated by the fact that medicine remains a male dominated profession <sup>127</sup>. The current generation of female medical students does not face the severity of difficulties that

---

<sup>122</sup> Pfeiffer, Early-Adult Development

<sup>123</sup> Gaensbauer, Mizner, Developmental Stresses

<sup>124</sup> Ibid.

<sup>125</sup> Sheets Kent, Gorenflo Daniel, Personal and Behavioral Variables Related to Perceived Stress of Second-year Medical Students. *Teaching and Learning in Medicine* 5(2):90-5, 1993

<sup>126</sup> Martin Catherine, Jones Janie, Bird Martha, Support Systems For Women In Medicine. *Journal of the American Medical Womens Association* 43(3):77-8, 83-4, 1988

<sup>127</sup> Nicolson Paula, Welsh Christopher, Sexual Harassment, Male Dominated Organizations and the Role of Counselling Psychology: The Case of Medical School. *Counselling Psychology Quarterly* 6(4):291-301, 1993



the female pioneers in the profession did but discrimination around gender issues still exists<sup>128</sup>. In one report from 1988, over half of the female residents interviewed felt that women were not as accepted as men in medicine and that they were subjected to negative comments based on their gender, a smaller percentage (44%) felt that women were made fun of by senior faculty<sup>129</sup>. Students who are members of a subgroup outside of the mainstream of medicine, such as women and students of low socioeconomic status will experience higher levels of academic stress<sup>130</sup>. Female medical students appear to have low self-expectations, they are found to have lower self-perception than male students even when they have higher academic achievement<sup>131</sup>.

Female students who are contemplating having a family are faced with additional difficulties in medical school, both logistical and psychological. Role stress related to balancing career and family interests has been identified as a major reason for female medical students to seek psychological counseling<sup>132</sup>. Striving for a career in medicine can produce feelings of guilt in young women, especially in concert with real or imagined disapproval from more traditional mothers<sup>133</sup>. Another difficulty for women in medicine is the relative paucity of role models for students. A longitudinal study of medical students at Harvard and Tufts<sup>134</sup> found that although academic pressures were the most common stressors among all students, almost half of the woman reported experiencing stress related to being female in medical school, including a lack of role models and negative attitudes toward women being expressed by faculty and students.

---

<sup>128</sup> Grant Linda. The Gender Climate of Medical School: Perspectives of Women and Men Students. *Journal of the American Medical Womens Association* 43(4): 109-110, 115-9, 1988

<sup>129</sup> Martin Catherine, Jones Janie, Bird Martha. Support Systems For Women In Medicine. *Journal of the American Womens Medical Association* 43(3):77-8, 83-4, 1988

<sup>130</sup> Coburn, Jovaisas. Perceived Sources of Stress

<sup>131</sup> Roos Noraloo, Gaumont Michel, Colwill Nina. Female and Physician: A Sex Role Incongruity. *Journal of Medical Education* 52(4):345-6, 1977

<sup>132</sup> Davidson Virginia. Coping Styles of Women Medical Students. *Journal of Medical Education* 53(11): 902-7, 1978

<sup>133</sup> Lloyd. Sex Differences

<sup>134</sup> Murphy Michael, Nadelson Carol, Notman Malkah. Factors Influencing First-year Medical Students' Perceptions of Stress. *Journal of Human Stress*. 10(4):165-73, 1984

The issues for ethnic minority students are in some ways similar to those of women as both groups are relative newcomers to the profession and both face discrimination from society as a whole. In the longitudinal study of common stressors noted above, 84% of ethnic minority students reported race-related stress and mentioned lack of role models and prejudice as being contributory <sup>135</sup>. As outsiders, women and ethnic minorities may both feel a need to over-achieve in order to overcome real or perceived bias against them. Being an outsider has inherent stresses, one researcher postulates that black medical students from competitive white colleges may enter medical school with low academic self-esteem. These students may have had fewer opportunities to develop confidence in their academic abilities compared to students at a black college <sup>136</sup>. In a 1980 study of first year medical students in North Carolina <sup>137</sup>, black students (who were a numerical minority) were found to have higher levels of perceived stress than their white counterparts. Specifically, the following stressors were cited significantly more often by black than white students: faculty and students making the individual feel unimportant, a lack of role models who understand the individual's needs, an insensitivity of the medical school environment to the individual's cultural background, and inadequate academic preparation for medical school. Although not well studied, overt racial discrimination or abuse most likely exists in some medical schools. In one study of third year students, racial harassment was reported by half of the non-white students, most commonly in the form of ethnic slurs <sup>138</sup>. The experience of ethnic minorities in medical school deserves attention, these students need to have their concerns documented and addressed. It is naive to assume that simply increasing the ranks of minority students will alleviate their concerns.

---

<sup>135</sup> Murphy et al., Factors Influencing

<sup>136</sup> Strayhorn Gregory, Frierson Henry, Assessing Correlation between Black and White Students' Perceptions of the Medical School Learning Environment, Their Academic Performances and Their Well Being. *Academic Medicine* 64(8): 468-73, 1989

<sup>137</sup> Strayhorn Gregory, Perceived Stress and Social Supports of Black and White Medical Students. *Journal of Medical Education* 55(7): 618-20, 1980

<sup>138</sup> Sheehan K., Sheehan David, White Kim, Leibowitz Alan, Baldwin DeWitt, A Pilot Study of Medical Student 'Abuse'. *Journal of the American Medical Association* 263(4):533-7, 1990

## Medical Student Abuse

Medical student abuse is a major source of student stress that has only recently been evaluated. In general the term refers to humiliation and harassment in medical training, the majority of which is verbal rather than physical. Surveys reveal that the majority of students consider themselves to have been abused during their time in medical school, the most common incidents being yelled at or humiliated and the most common sources of abuse are clinical faculty and housestaff<sup>139,140,141,142</sup>. Although less rare, reports of physical abuse exist, percentages of students reporting actual physical harm range from 16-25%<sup>143,144, 145</sup>. Other notable forms of abuse reported by students include being placed at unnecessary medical risk, being assigned tasks for punishment rather than educational purposes, being threatened unjustly with the possibility of receiving a bad grade and having others take credit for the student's work<sup>146</sup>. The effects of abuse are difficult to quantify although some believe that "Abuse of medical students has the potential of being one of the most stressful and demoralizing features of medical education"<sup>147</sup>.

---

<sup>139</sup> Wolf T., Randall H., von Almen K., Tynes L. Perceived Mistreatment and Attitude Change by Graduating Medical Students: A Retrospective Study. *Medical Education* 25(3): 182-90, 1991

<sup>140</sup> Silver Henry, Glickman Anita. Medical Student Abuse: Incidence, Severity and Significance. *Journal of the American Medical Association* 263(4): 527-32

<sup>141</sup> Sheehan et al. A Pilot Study

<sup>142</sup> Richman Judith, Flaherty Joseph, Rospenda Kathleen, Christensen Michelle. Mental Health Consequences and Correlates of Reported Medical Student Abuse. *Journal of the American Medical Association* 267(5): 692-4, 1992

<sup>143</sup> Sheehan et al. A Pilot Study

<sup>144</sup> Baldwin De Witt, Daugherty Steven, Eckenfels Edward. Student Perceptions of Mistreatment and Harassment During Medical School. *Western Journal of Medicine* 155(2): 140-5, 1991

<sup>145</sup> Wolf et al., Perceived Mistreatment

<sup>146</sup> Sheehan et al., A Pilot Study

<sup>147</sup> Rosenberg Donna, Silver Henry. Medical Students Abuse: An Unnecessary and Preventable Cause of Stress. *Journal of the American Medical Association* 251(6):739-42, 1984

Another distinct form of abuse is sexual harassment. Female students tend to report higher rates of sexual harassment than male students, common complaints are sexual slurs and advances <sup>148</sup>. While a survey of seniors at 10 medical schools across the country <sup>149</sup> revealed that sexual harassment was reported by over 50% of all respondents, another study at one midwestern school <sup>150</sup> revealed that over 80% of women had been subjected to sexual slurs, and over 50% reported sexual advances. Clinical faculty and housestaff were found to be the most common perpetrators of the abuse. In addition, one third of women also reported feeling they had been denied opportunities because they were female or that they experienced other forms of sexual discrimination . I believe that this issue is not taken seriously enough. A researcher of sexual harassment at medical schools in England concluded that "the dominant culture of the medical school tolerates a range of perspectives on issues of harassment and gender inequalities which does not promote a healthy learning environment" <sup>151</sup>. One could undoubtedly repeat these results in the US where there is a generalized tolerance of sexual harassment.

Students who do not conform to traditional gender profiles are at the highest risk for sexual harassment, they may be victims of prejudice based on an assumption of homosexuality <sup>152</sup>. Mistreatment of gay and lesbian medical students exists, including the voicing of homophobic comments <sup>153,154</sup>. This is not surprising as homophobia still exists in the medical community <sup>155</sup>. Prior to 1980 homosexuality existed as a psychiatric

---

<sup>148</sup> Wolf et al., Perceived Mistreatment

<sup>149</sup> Baldwin et al., Student Perceptions

<sup>150</sup> Sheehan et al., A Pilot Study

<sup>151</sup> Nicolson Paula, Welsh Christopher, Sexual Harassment, Male Dominated Organizations and the Role of Counselling Psychology: The Case of Medical School. *Counselling Psychology Quarterly* 6(4):291-301, 1993

<sup>152</sup> Richman et al., Mental Health Consequences

<sup>153</sup> Fikar Charles, Mistreatment of Gay Medical Students (letter) *Western Journal of Medicine* 156(1):88, 1992

<sup>154</sup> Tinmouth Jill, Hamwi Gerald, The Experience of Gay and Lesbian Students in Medical School. *Journal of the American Medical Association* 271(9): 714-5, 1994

<sup>155</sup> Matthews WMC, Booth MW, Turner JD, Physicians' Attitudes Toward Homosexuality: Survey of a California County Medical Society. *Western Journal of Medicine* 144:107-11, 1986

diagnoses in the DSM, and although it is no longer considered such, many in the profession may still believe it should be so. Indeed medical students have been shown to harbor prejudiced and negative attitudes toward homosexuals<sup>156</sup>. One of the consequences of a climate of homophobia is the fear that prevents gay or lesbian faculty and house staff from revealing their sexual orientation. This robs students of the benefits of role models and teaches that homosexuality is not accepted in medicine. Students also fear being openly gay, due to possible discrimination and stigmatization. This fear of being "out" was cited most often as the reason for the nonexistence of homosexual support groups in a national survey of gay and lesbian students<sup>157</sup>. Researchers have suggested that gender-role issues receive attention in an effort to prevent abuse, and that efforts be made to "rethink notions of traditional masculinity and femininity as they are embodied in medical training"<sup>158</sup>.

The effect of abuse on students can be significant. In a 1990 survey<sup>159</sup> at a large medical school among all of the students reporting abuse, 69% stated that the incident had been of "major importance" to them and that it had been "very upsetting", and 49% stated that the event affected them for a month or longer. Students who have been the target of an abusive episode are significantly more likely to experience depressive symptoms and to drink for escape<sup>160</sup>. In a study of third year students, 67% reported that mistreatment during their training had compromised their emotional health and 40% felt it had negatively affected their physical health. Over one third reported that they had seriously considered dropping out of school as a result of being mistreated and almost a quarter of students would have chosen a different profession had they known the mistreatment they were to endure<sup>161</sup>.

---

<sup>156</sup> Kelly Jeffrey, Lawrence Janet, Smith Steve, Hood Harold, Cook Donna, Medical Students' Attitudes Toward AIDS and Homosexual Patients. *Journal of Medical Education* 62(7):549-56, 1987

<sup>157</sup> Townsend Mark, Wallick Mollie, Cambre Karl, Support Services for Homosexual Students at U.S. Medical Schools. *Academic Medicine* 66(6): 361-3, 1991

<sup>158</sup> Richman et al., Mental Health Consequences

<sup>159</sup> Silver, Glicker, Medical Student Abuse

<sup>160</sup> Richman et al., Mental Health Consequences

<sup>161</sup> Sheehan et al., A Pilot Study

The pervasive nature of abuse in medical school is disturbing. It undoubtedly has a detrimental impact on the psychological and professional development of all students. In addition, abuse corrodes the student-teacher relationship and most likely effects patient care as well. Mistreatment has been correlated to an increase in perceived cynicism over the four years of school <sup>162,163</sup>. It is interesting to note that the majority of abuse against students is perpetrated by interns and residents. One might suspect that house staff would have compassion for students since they were so recently students themselves. However, research indicates that they too often encounter abuse <sup>164</sup>, this may suggest that mistreatment cycles are set up within the hospital where higher status leads to the abuse of those below.

While many students report abuse on surveys, few are likely to report it to school authorities or counselors. This may be due to inadequate responses to complaints when they are made, or to the fear of ridicule or punishment as a result of reporting an incident <sup>165</sup>. It seems evident that efforts must be made to prevent abuse and to allow for discussion of its causes. One successful attempt to address the issue of inappropriate behavior and comments from faculty was undertaken at the University of Pennsylvania School of Medicine<sup>166</sup>. Students of diverse gender, race and sexual orientation who were concerned about disrespectful behavior at their school created a video giving examples of such behavior. This video was presented at a faculty workshop where additional role playing and small group discussion ensued. It was hoped that an open discussion of these incidents would facilitate awareness of insensitive behaviors and encourage more enlightened behavior in the future. The students involved in making the video report

---

<sup>162</sup> Wolf et al., Perceived Mistreatment and Attitude Change

<sup>163</sup> Sheehan et al., A Pilot Study

<sup>164</sup> Komaromy Miriam, Bindman Andrew, Haber Richard, Sande Merle, Sexual Harassment in Medical Training. *The New England Journal of Medicine* 328(5): 322-6, 1993

<sup>165</sup> Sheehan et al., A Pilot Study

<sup>166</sup> Johnston Mary Anne, A Model Program to Address Insensitive Behaviors Toward Medical Students. *Academic Medicine* 67(4):236-7, 1992

finding it a valuable learning experience while faculty reacted positively and encouraged more widespread use of the video . While prevention of abuse is optimal, it is important to encourage student reporting of incidents and to have established guidelines for dealing with the issue. Suggestions from students on this topic include appointing grievance committees to investigate episodes of abuse, establishing procedures to discipline guilty parties, providing counseling to both parties involved and ensuring the privacy of students who bring complaints <sup>167</sup> .

### **Conclusions**

This discussion of medical student stress was meant to raise concern about student well being in general and in the context of the possible link between stress and the onset of depression. Regardless of whether the stresses of medical school actually precipitate a depressive episode for students, their existence undoubtedly challenges the strength of students coping mechanisms. Some challenge is inherent in the learning process and as a preparation for the rigors of residency. However, I hope it is clear from this discussion that I believe there are many stresses that are not beneficial and which may have significant sequellae. Chief among these are the stresses brought about from discrimination and abuse, academic overload with poor teaching strategies, inadequate time for students to attend to other developmental needs and a rigid adherence to a 4 year curriculum for all students. Another stress not addressed in this chapter relates to the stigma associated with mental illness or emotional fragility. This will be addressed in the next chapter.

---

<sup>167</sup> Silver, Glicker, Medical Student Abuse

## Chapter Four

### Counseling Services and Stress Prevention in Medical School

#### Availability

While many would agree that counseling services can be an effective tool to decrease stress and illness, and that "early identification and treatment of medical students under stress could be cost-effective by reducing the problem before the impairment occurs as physicians" <sup>168</sup>, little research has been done to document the availability, use, and success of such services. A national survey of the deans of student affairs and of students from the 1970s <sup>169</sup> revealed that some form of psychological service was available in at least 75% of schools, most often in the form of personal counseling by a private psychiatrist or psychiatric resident. Close to 90% of the deans reported that students desiring counseling needed to first contact the office of student affairs, yet all schools reported that counseling was confidential. This begs the question of how confidentiality is defined. Over one third of the deans did not believe that their counseling system was adequate, especially in terms of accessibility and availability of services. Also of note was their concern that more separation exist between counseling services and the student affairs office to decrease worries of confidentiality. Students were also surveyed in this study, they were also concerned about lack of confidentiality due to the same office being used for administration and counseling. Students also complained that information about counseling services was limited. While this is a single survey conducted two decades ago, the issues raised are more than likely still relevant today. New research in this area is needed to document

---

<sup>168</sup> Seigle Richard, Schuckit Marc, Plumb Diane. Availability of Personal Counseling in Medical Schools. *Journal of Medical Education* 58(7):542-6, 1983

<sup>169</sup> Ibid.



whether students have access to services and whether they are inhibited from using them due to confidentiality issues or lack of information.

### **Do Students Use Counseling Services?**

Several researchers have noted that distressed medical students are unlikely to seek counseling<sup>170, 171, 172, 173</sup>. While some students may not recognize that they need help, others may avoid seeking it for other reasons. One study revealed that the association between student awareness of symptoms of impairment and the need to seek help was no stronger than chance, and that those students who did feel the needed to seek counseling were unlikely to actually do so<sup>174</sup>. There are probably a myriad of reasons why students do not seek help, a few of these may be: the stigma of using mental health facilities, the fear of being overwhelmed by opening up a Pandora's box of feelings, a fear that there is no time to take care of themselves, fear that school authorities will find out and that this will bring negative consequences, or a denial of the importance of their symptoms. Depressed students may be particularly unlikely to seek treatment due to the lethargy, indecisiveness and anhedonia associated with the disease. A survey of 304 first and second year students<sup>175</sup> showed that only 40% of those identified by DSM-III criteria as depressed, sought treatment. The most common reasons for not doing so were lack of time and a conviction that to be depressed in medical school was normal.

---

<sup>170</sup> Zoccolillo Mark, Murphy George, Wetzel Richard, Depression Among Medical Students.

<sup>171</sup> Marchand William, Palmer Cheryl Ann, Gutmann Laurie, Brogan Walter III, Pearson R. John, Medical Students' Perceptions of Having Symptoms of Impairment and of the Need to Seek Counseling (Brief). *Journal of Medical Education* 61(9): 774, 1986

<sup>172</sup> Kaltreider Nancy, The Impact of a Medical Student's Suicide. *Suicide and Life-Threatening Behavior* 20(3): 195-205, 1990

<sup>173</sup> Lloyd C., Sex Differences in Medical Students Requesting Psychiatric Intervention

<sup>174</sup> Marchand et al., Medical Students' Perceptions

<sup>175</sup> Zoccolillo et al., Depression Among Medical Students

A study of how medical students react to an acute event may illuminate patterns of how students handle emotional stress in general. In 1988, a third-year student at a large medical school committed suicide and a subsequent study of other students' reactions to the suicide was undertaken <sup>176</sup>. Although many students were clearly emotionally shaken by the event, a fear of revealing vulnerability and the stigma associated with mental illness prevented these students from seeking counseling. Many of these students found their strong emotional response to the suicide intrusive and reacted with denial and avoidance. Those interviewed suggested that counseling services were not used extensively because students feared that facing their emotions would decrease their academic effectiveness. It may be reasonable to generalize from this acute situation and assume that students fear strong emotions as a threat to academic progress. This may be especially true of students in the first and second years of training.

Participation in clinical psychiatric rotations may prompt students to seek counseling. In a study of students who sought consultation for distress during their psychiatric rotation, a theme emerged showing that students had difficulty differentiating between themselves and their patients <sup>177</sup> and thus became acutely distressed. This was particularly true for students who had a close relative with a major psychiatric illness or for female students who had been victims of sexual abuse in the past. It seems to me that these students were probably less acutely distressed throughout their medical school training but were unable to seek help or acknowledge their problems before their psychiatric rotation. The reason for this might be that the medical school climate in general is not supportive of students with emotional concerns, but that the climate within a psychiatric rotation is more accepting. The view that medical school is not a safe place to explore emotional issues is supported by the following: Ross, in his literature review on physician suicide <sup>178</sup> notes that medical

---

<sup>176</sup> Kaltreider, *The Impact of Suicide*

<sup>177</sup> Kris Kathryn, *Distress Precipitated by Psychiatric Training Among Medical Students*. *American Journal of Psychiatry* 143(11):1432-5, 1986

<sup>178</sup> Ross M., *Suicide Among Physicians*. *Psychiatry in Medicine* 2(3):189-98, 1971

students are unlikely to seek psychiatric help, and believes there may be a "subtle but demeaning attitude toward emotional illness and psychiatric help inculcated in the medical school years". If this is so it is most unfortunate as it promotes the denial of symptoms and the prolongation of unhealthy coping skills.

## Suggestions

Acknowledging that it may be impossible to change the overall climate of medical education so as to promote a climate of self-acceptance and exploration, a few practical suggestions will now follow. The existence of high-quality, anonymous and affordable mental health services within the school is essential. These services should be adequate to meet student needs so that waiting lists do not develop. Students are often given a single exposure to information on counseling services during orientation. This is inadequate, information should be distributed in several different mediums and at various intervals throughout the year. In order to alleviate fear of lack of confidentiality, the counseling office should be physically isolated from the administration offices, and students should not need to contact student deans in order to make appointments. A referral list of counselors in the community should be readily available to students. Literature exists advocating that medical schools be more proactive in attempting to prevent student distress. Specific suggestions in these area include the implementation of educational programs on depression and suicide, particularly to encourage help-seeking behavior among distressed students<sup>179,180</sup>. Encouragement of the use of counseling services, delivered in small group settings may help to overcome a student's conviction that seeking counseling is an admission of failure<sup>181</sup>. Other suggestions include continued research on the prevalence and severity of mental illness and stress in this population,<sup>182</sup> support groups to encourage

---

<sup>179</sup> Pepitone-Arreola-Rockwell Fran. Rockwell Don. Core Nolan. Fifty-Two Medical Student Suicides.

<sup>180</sup> Kaltreider. The Impact of Suicide.

<sup>181</sup> Seigle et al.. Availability of Personal Counseling

<sup>182</sup> Clark. Zeldow. Vicissitudes

dialogue on distress <sup>183,184</sup> and a plan for responding to student suicide which is ready for implementation if needed <sup>185</sup>.

### **Distress Prevention**

It would be advantageous to implement distress prevention plans so as to reduce the number of students needing acute interventions. One suggestion in this area is to establish committees on student well-being, composed of students, faculty and administrators that can identify stresses and form plans to address them. Communication between medical students and faculty or administration is often sporadic and specific vehicles for promoting dialogue may be useful in allowing students to voice concerns and suggestions. Faculty/student small-group support programs have been found to be useful in decreasing anxiety, especially at the start of school <sup>186</sup> and in establishing strong connections between students and faculty <sup>187</sup>. Small groups of faculty and students offer a setting where students can provide emotional support to each other and discuss disturbing issues in a safe environment <sup>188</sup>. They also provide an arena where students are encouraged to value their experiences, an event which may be all too unusual in medical school. Off-campus retreats with recreational or unstructured time can also facilitate the formation of relationships between faculty and students without the constraints of academic hierarchy <sup>189</sup>.

---

<sup>183</sup> Kaltreider, The Impact of a Suicide.

<sup>184</sup> Cohen Ronald, The Emotional Problems of Medical Students: Support Groups as a Preventive Mental Health Measure. *Journal of American College Health* 32(Aug):44-45, 1983

<sup>185</sup> Kaltreider, Impact of Suicide

<sup>186</sup> Meilman Philip, Meeting the Mental Health Needs of Medical Students: The Effects of a Peer Support Program. *Journal of College Student Personnel* 27(4):373-4, 1986

<sup>187</sup> Ficklin Fred, Hazelwood Jill, Carter James, Shellhamer Robert, Evaluation of a Small-Group Support Program For First-Year Medical Students. *Journal of Medical Education* 58(10):817-9, 1983

<sup>188</sup> Goetzel Ronnie, Croen Lila, Shelov Steven, Boufford Jo, Levin Gilbert, Evaluating Self-Help Support Groups For Medical Students. *Journal of Medical Education* 59(4):331-40, 1984

<sup>189</sup> Plaut Michael, Hunt Gerard, Johnson Frank, Brown Robert, Hobbins Thomas, Intensive Medical Student Support Groups: Format, Outcome, and Leadership Guidelines. *Journal of Medical Education* 57(10):778-6, 1982

More formal attempts to lower distress levels have been studied as well. A course in stress management was offered to a study population of medical students <sup>190</sup> with the result that 90% reported that they wanted it to be included in the curriculum . I believe that classroom discussions about the strain of medical education may be a good idea, but they carry the danger of alienating students who may feel they are being patronized by faculty and administration who assume they understand what the students' experiences are. This may be compounded by student frustration towards an administration that acknowledges stress but does nothing to reduce it. Therefore, structural changes to alleviate the causes of stress are the first step that should be undertaken.

At least one institution has experimented with attempting to prevent medical school stress before students even enter school. The University of California, Los Angeles, School of Medicine has offered an intensive seminar to undergraduates which attempts to explore the students' expectations about medical school <sup>191</sup>. It is hoped that by entering medical school with realistic expectations of the training process and the profession that students will be better able to cope with subsequent difficulties. Small group sessions focusing on topics of medical school, internship and residency, physician impairment, lifestyle and professional choices were combined with preceptor meetings to provide the prospective students with an overview of training and professional experiences. The physician preceptors exposed the trainees to the daily life of a physician and students were required to write journal entries in order to encourage emotional awareness. In addition, the trainees were asked to research a question of interest to them regarding a psychosocial aspect of the physician's job or life. After the course the students had consistently high evaluations of

---

<sup>190</sup> Nathan Ronald, Nixon Frances, Robinson Leslie, Baimsfather Lee, Allen John, Hack Mary. Effects of a Stress Management Course of Grades and Health Of First-Year Medical Students. *Journal of Medical Education* 62(6):514-7, 1987

<sup>191</sup> Coombs Robert, Perell Karen, Ruckh Marie. Primary Prevention of Emotional Impairment Among Medical Trainees. *Academic Medicine* 65(9):576-81, 1990

the experience and some expressed that they now felt better able to prepare for the problems that might arise in medical school. Others decided that they were no longer interested in pursuing a medical career after being exposed to its realities. Thus the students appear to have gained valuable insight allowing them to either prepare for or reconsider their career choice. Follow-up evaluations continued to be positive and reiterated that the course provided realistic information on medical school and allowed students to prepare emotionally for the experience. Much student distress may be the result of inaccurate expectations and lack of preparation for the stresses involved. Exposure to the realities of medical training appears to have positive results.

In summary, various methods of addressing and preventing student distress exist. The most urgent concern should be for those students who are already in need of help, thus adequate counseling services need to be in place at all schools and persistent efforts made to identify barriers to their use. Distress prevention is a more difficult issue and involves every aspect of the medical school environment. I believe it is dangerous and presumptuous to educate students on their own experience. Therefore, research on student concerns should precede the implementation of lectures on students distress. However, stress management courses that focus on coping skills and that educate about stress, anxiety and depression in the general sense are probably very useful to students and send the message that discussion of these topics is valued. The most important point regarding administration and counseling is that student mental health must be a priority, and the administration must be flexible enough to react to student needs as they arise.

## **Chapter Five**

### **A Survey of Medical Students at The University of California, San Francisco (UCSF)**

#### **Introduction**

This study was undertaken in order to explore the levels of depressive symptomatology among first and second year medical students at UCSF. In addition to measuring the overall prevalence of symptoms, I attempted to identify groups of students at particularly high risk and to discover how symptom levels interacted with self-identification of depression and help-seeking behavior. A standardized instrument, the 13 item Beck Depression Inventory (BDI) was used, and other variables were assessed relative to the BDI score.

It was hypothesized that students would show significant symptomatology but would perhaps not self-identify as depressed and not be obtaining counseling. Women and ethnic minorities were expected to be more symptomatic than the general student population. Use of school counseling services was predicted to be low due to a variety of reasons including lack of availability. It was hoped that particular barriers to use of counseling services could be identified.

## **Methods**

This survey is a cross-sectional, population-based study of first and second year medical students at the University of California, San Francisco.

### **Data collection instrument**

With the exception of the BDI, all of the questions were formulated by the author for this study. An information sheet identifying the researcher, a resources list and the questionnaire were distributed to the students during regularly scheduled class time. These documents can be found in the appendix. For analysis purposes it was decided that a response would be considered complete if the BDI had been completed, although after data collection it was discovered that all of the questionnaires had been answered in full.

### **Pretest report**

The survey was pre-tested on twelve members of the UCB-UCSF Joint Medical Program. Only the instrument itself was pre-tested, the sampling frame and distribution procedures were not. The actual survey distribution is population based and so there was no need to test the sampling frame, and it was not possible to test the distribution procedures during the pretest. A few changes were made based on the responses, most changes concerned the wording of questions, or the addition of response choices.

### **Sampling Report**

Both the first and second year classes were surveyed in the spring of 1994. A high response rate was obtained from both classes, but although 98% of the first year class was in attendance and was surveyed, only 51% of the second year students were in attendance. This created a selection bias in the second year data which is difficult to characterize. I



cannot predict whether the students who chose to come to class were more or less likely to be depressed. The data from this group is presented along with that from the first year class with the caveat that there is an uncharacterized selection bias.

## **Results: Analysis of Survey Data**

### **Response Rate**

The first year class at UCSF (n=140) was sampled on April 28, 1994.

137 students were in attendance and were given surveys.

Of these, 129 surveys were completed for a 94% response rate.

The second year class (n=140) was surveyed on May 5, 1994.

72 students were in attendance and were given surveys.

Of these, 65 surveys were completed for a 90% response rate.

### **Student Demographics**

Gender	First year class	Second year class
Male:	62 (48%)	21 (32%)
Female:	67 (52%)	44 (68%)

Age	First year class	Second year class
23 or younger:	71 (55%)	20 (31%)
24-26:	37 (29%)	25 (38%)
27-29:	11 (8.5%)	10 (15%)
30 or older:	10 (8%)	10 (15%)

Ethnic Identity

African American:	15 (12%)	7 (11%)
Asian/ Pacific Islander:	29 (22%)	14 (22%)
Caucasian:	62 (48%)	39 (60%)
Latino/Latina :	16 (12%)	4 (6%)
Other :	6 (5%)	1 (1%)

Sexual Orientation

First year class

Second year class

Heterosexual:	120 (93%)	60 (92%)
Homosexual:	3 (2%)	3 (5%)
Bisexual:	5 (4%)	2 (3%)
Unsure:	1 (1%)	0

Highest level of parental education

Elementary school:	2 (1.5%)	1 (1%)
High School:	13 (10%)	16 (25%)
College:	37 (29%)	14 (22%)
Graduate or professional school:	77 (60%)	34 (52%)

### Self-Reported Prevalence of Depression

	First year class	Second year class
Lifetime:	58 (45%)	33 (51%)
In medical school:		
Only before medical school	21 (16%)	8 (12%)
Only during medical school	4 (3%)	5 (8%)
Both during and before medical school	33 (26%)	16 (25%)
Total of students reporting depression		
during medical school:	37 (29%)	21 (32%)

### Current : over the past week

	First year class	Second year class
None:	66 (51%)	29 (45%)
Mild depression:	43 (33%)	24 (37%)
Moderate:	16 (12%)	12 (18%)
Severe:	4 (3%)	0

### Beck Depression Inventory Scores

	First year class	Second year class
Normal:	70 (54%)	32 (49%)
Mild depression:	31 (24%)	16 (25%)
Moderate depression:	24 (19%)	14 (22%)
Severe depression:	5 (4%)	3 (5%)

### **BDI vs. Self Identification:**

This is a comparison of BDI scores to the self-report of depression over the past week, in an attempt to gauge how well students assess their depression status. In general, there was a tendency for the self-report to be an underestimation as compared to the BDI score. This underestimation was more likely to occur with higher BDI scores.

#### **First year class**

BDI score of mild depression: 31 students recorded scores in this category.

Of them, 14 reported not being depressed at all, 13 reported mild depression and 4 reported moderate depression:

45% underestimated their depression status relative to the BDI.

BDI score of moderate depression: 24 students recorded scores in this category.

Of them, 3 reported no depression, 10 reported mild depression, 9 reported moderate depression and 2 reported severe depression:

54% underestimated their depression status relative to the BDI.

BDI score of severe depression: 5 students recorded scores in this category.

Of them, 1 reported no depression, 1 reported mild depression, 1 reported moderate depression and 2 reported severe depression:

60% underestimated their depression status relative to the BDI.

Second year class

BDI score of mild depression: 16 students recorded scores in this category.

Of them, 6 reported no depression, 7 reported mild depression, 3 reported moderate depression:

38% underestimated their depression status relative to the BDI.

BDI score of moderate depression: 14 students recorded scores in this category.

of them, 3 reported no depression, 6 reported mild depression, 5 reported moderate depression:

64% underestimated their depression status relative to the BDI.

BDI score of severe depression: 3 students recorded scores in this category.

Of them, 2 reported mild depression and 1 reported moderate depression:

100% underestimated their depression status relative to the BDI.

Combined first and second year data:

Of students with BDI scores of mild depression, 43% underestimated their depression status

Of students with BDI scores of moderate depression, 58% underestimated their depression status

Of students with BDI scores of severe depression, 75% underestimated their depression status

## Demographics of Students with High BDI Scores

The parameters of gender, age, ethnic identity, parental education level and sexual orientation were assessed.

### First year class:

Case = BDI of 8 or higher, control = BDI of 7 or less

<u>Characteristic</u>	<u>Odds ratio</u>	<u>95% confidence interval</u>
Female gender	2.1	1.24 - 2.96
African-American status	5.31	4.19 - 6.43
Young age (23 or younger)	1.2	1.15 - 2.79
Lower parental education *	1.52	.69 - 2.35
Non-heterosexual status	1.8	.35 - 3.25

\* Less than graduate or professional school

Thus, the characteristics of female gender, African-American status and young age show a significant relationship to BDI scores of moderate or severe depression.

When scores indicative of severe depression are used, allowing for greater specificity of depression, the relationship between female gender and symptomatology becomes stronger. With regard to ethnic identity, African-American status is no longer associated with symptoms while Asian-Pacific Islander status, (which was not associated using lower BDI cutoffs) is now strongly associated. Young age is no longer a predictor of symptoms.

Case = BDI of 16 or higher, control = BDI of 15 or less

<u>Characteristic</u>	<u>Odds ratio</u>	<u>95% confidence interval</u>
Female gender	3.87	1.65 - 6.09
Asian-Pacific Islander	5.65	3.8 - 7.5
Young age (23 or younger)	1.28	0 - 3.10

Second year class:

In this data set, female gender, African-American status and non-heterosexuality were associated with depressive symptoms, non-Caucasian status in general and age (either young or old) were not.

Case = BDI of 8 or higher, control = BDI of 7 or less

<u>Characteristic</u>	<u>Odds ratio</u>	<u>95% Confidence Interval</u>
Female gender	2.8	1.42 - 4.18
African-American status	4.5	2.88 - 6.12
Non-heterosexual status	4.93	3.04 - 6.82

Two positive associations became stronger when only BDI scores indicative of severe depression were used:

Case = BDI of 16 or greater, control = BDI 15 or less

<u>Characteristic</u>	<u>Odds ratio</u>	<u>95% Confidence Interval</u>
Female gender	infinity*	N/A
Non-heterosexual status	7.25	4.64 - 9.86

\* All of those with severe depression scores were women

When first and second year data are combined, and only severe BDI scores are used, the only parameter that carries an association to symptoms is female gender:

Odds ratio = 5.52

95% Confidence interval = 3.4 - 7.64

## Current Depressive Symptoms and Use of Counseling Services

### First year class:

<u>BDI score</u>	<u>Number and % receiving counseling</u>
Mild depression: 31 students	3 (10%)
Moderate: 24 students	5 (21%)
Severe depression: 5 students	3 (60%)

### Self-report of current depression

Mild: 43 students	8 (19%)
Moderate: 16 students	2 (13%)
Severe: 4 students	2 (50%)

### Self report and BDI congruent

Moderate: 10 students	2 (20%)
Severe: 2 students	2 (100%)

### Second year class:

<u>BDI score</u>	<u>Number and % receiving counseling</u>
Mild: 16 students	2 (13%)
Moderate: 14 students	1 (7%)
Severe: 3 students	1 (33%)

### Self-report of current depression

Mild: 24 students	4 (17%)
Moderate: 12 students	0 (0%)
Severe: 0 students	NA



Students who have symptoms are not utilizing counseling services at a high rate. In addition, it appears that students in the second year class are less likely to be using counseling services than students in the first year class.

### **Suicidal Ideation during medical school**

	First year class	Second year class
Yes	11 (9%)	7 (11%)
Female	7	6
Male	4	1
Student felt he/she might take action on suicidal ideation	3 (2%)	3 (5%)

### **Anxiety**

43% of those surveyed reported having had self-defined anxiety attacks while in medical school. Women were more likely than men to report such attacks with the following statistics:

Odds Ratio = 2.79

95% Confidence Interval = 2.07 - 3.51

### **BDI of 0**

It is not clear in the literature whether a score of 0 on the BDI is truly normal. I suspect that it is not, and that it represents significant denial of even normal levels of depressive symptomatology. Younger students (23 or younger) were more likely than older students to record scores of zero.

Odds Ratio = 2.5

95% Confidence Interval = 1.42 - 3.58

### Excessive Use of Alcohol or Drugs

	First year class	Second year class
Self report of excessive use in medical school	10 (8%)	4 (6%)
By gender:		
Men	8	1
Women	2	3
By age:		
26 or younger	10	3
27 or older	0	1

These students had BDI distributions similar to those of their entire class

### Use of Counseling Services

	First year class	Second year class
In school	8 (6%)	5 (8%)
Out of school	8 (6%)	3 (5%)

### Adequacy of Counseling services in school

	First year class	Second year class
Adequate	54 (42%)	20 (31%)
Not adequate	19 (15%)	11 (17%)
Don't know	56 (43%)	34 (52%)

### Barriers to Use of Counseling Services

	First year class	Second year class
Students citing one or more barriers	90 (70%)	44 (68%)
Percentage of women with barriers	80% (53/67)	82% (36/44)
Percentage of men with barriers	60% (37/62)	38% (8/21)
Average number of barriers cited	3	3

### Prevalence of Specific Barriers

Note: The percentages are from the number of students citing a barrier divided by the total population surveyed.

	First year class	Second year class
Lack of time	41 (32%)	26 (40%)
Stigma of using mental health services	40 (31%)	11 (17%)
Lack of confidentiality	34 (26%)	12 (18%)
"My problems are not important"	29 (22%)	10 (15%)
"Using services would mean I was weak"	25 (19%)	8 (12%)
Fear of documentation on school record	18 (14%)	10 (15%)
"No one will understand my problems"	18 (14%)	5 (7%)
Difficulties in finding or accessing services	16 (12%)	7 (11%)
Use of services will bring unwanted intervention	15 (12%)	3 (4%)
Lack of availability of services	12 (9%)	8 (12%)
Lack of sensitivity to cultural issues	10 (8%)	2 (3%)
Lack of sensitivity to sexual identity issues	3 (2%)	2 (3%)

## **Barrier Domains**

In order to group the barriers, domains were formed from barriers representing similar concerns.

The fear of consequences domain was defined as including concerns of lack of confidentiality, fear of documentation, stigma of mental health services and fear of intervention.

This domain accounted for 37% of the barriers cited in the first year class and 35% of the barriers after combining the first and second year data.

A structural domain was created out of concerns over lack of time, lack of availability, difficulty in finding/accessing services and cost barriers.

This domain accounted for 29% of barriers cited in the first year class and 33% of the barriers after combining the first and second year data.

The low self-esteem domain contained the following concerns: no one will be able to understand my problems, my problems are not important, using services will mean I am weak.

This domain accounted for 25 % of the barriers cited in the first year class and 23% of the barriers after combining the first and second year data..

## **Demographics of barrier domains**

### Age

Older students (27 years or older) were more likely to cite 2 or more barriers  
in the fear of consequences domain:

Odds Ratio = 4.9

95% Confidence Interval = 3.91 to 5.89

Younger students (26 or younger) were more likely to cite 2 or more barriers in the low self-esteem domain.

Odds ratio = 3.74

95% Confidence Interval = 1.67 to 5.81.

### Gender

Women were more likely than men to cite 2 or more barriers in the fear of consequences domain:

Odds ratio = 2.73

95% Confidence interval = 1.85 - 3.61

Women were also more likely than men to cite 2 or more barriers in the low self esteem domain:

Odds ratio = 3.07

95% Confidence interval = 1.78 - 4.36

### **Barriers for Students with BDI Scores of 16 or Higher**

The 8 students (combined first and second year classes) with BDI scores indicative of severe depression listed the following barriers in decreasing order of prevalence:

1. Cost (6 students)
2. Difficulty finding/accessing services = Confidentiality concerns = No one will understand my problems (5 students)
3. Lack of time = fear of documentation = my problems are not important = fear of intervention (4 students)
4. Lack of availability = stigma = using services means I am weak (3 students)

Only 2 of these students were using counseling services in school, 2 were using other services and 4 were not using any services.

### **Write-in Barriers**

Students were given the opportunity to write-in other barriers to their use of school counseling services. To summarize these comments from both the first and second year classes, many related a distrust of counselors and psychiatry in general. Counselors were viewed by some as cold, untrustworthy and unable to help students. A conviction existed in some that simply talking to someone would not be of any help and that the student is responsible for, and must handle their problems on their own. Others felt that they would get over their problems soon, or that a certain degree of stress was normal. Other issues were the limited number of visits allotted to students, the concern being that this would not allow for anything but superficial analysis of a problem. Lack of confidentiality was listed again, especially in conjunction with the concern that the student dean who writes residency recommendations is too close to the counseling resources. Another concern was that students felt drug treatments were used too quickly.

## Conclusions

### Introduction

This survey was designed to investigate the prevalence of depressive symptoms and the use of counseling services among first and second year medical students at UCSF. The results document that high levels of depressive symptoms exist and that students can identify significant barriers to their use of counseling services. The literature suggests that medical students may be at increased risk for clinical depression compared to the general population and the results from my survey are comparable to others with respect to BDI scores. Medical students have also been shown to be unlikely to use counseling services even when they are depressed. For this reason it is important to elucidate what is preventing them from doing so.

The question of whether medical students are more likely to be depressed than the general population has not been answered. This is due to the fact that most studies of depression in this population measure depressive symptoms and do not establish clinical diagnoses. While community levels of depression are known, there are no standards for levels of depressive symptoms in the general population. However, the levels of depressive symptoms found in this study are certainly higher than optimal, as one in four students were found to have moderate or severe levels of symptoms. This warrants attention regardless of whether it represents the general population or not. Another imprecise marker for depression in a population is the suicide rate. While not all suicide is related to depression, 80% of suicides are thought to be. The fact that female medical students are 3-4 times more likely to commit suicide than their agemates in the general population suggests that depression may be a serious problem for them. It is also notable that medical student suicides peak at the end of the second year of study as do depressive symptoms.

### **Sampling Bias**

Before discussing the results of my analysis, I will address the differences in first and second year sampling frames. This study was designed to be population-based, however only 51% of the second year class was present when the survey was distributed and so a selection bias was introduced. This bias is difficult to categorize, I am unable to say how the students in attendance might differ from those not in attendance in terms of depressive symptoms or use of counseling services. I can say that women were oversampled as they do not comprise 68% of the class as a whole. Despite the selection bias, the results from this data set are still valid in many instances and these results will be discussed below.

I feel it is important to address the atmosphere in the second year class when I distributed my survey. The low attendance rate may be an indication of distress in the population. In addition, a palpable sense of frustration and hostility was present among the students that I interacted with as evidenced by remarks directed to me both verbally and in writing. An example is the following quote written by a second year student on the survey instrument : "This is an awfully stupid and unnecessary study. Don't you have something better to study? ". There was a distinct contrast between the overall positive energy of the first year class and the negative energy in the second year class. This was clearly not a relaxed or overtly content group of people, whether this reflects their true personalities or their status as second year students at the end of spring semester is not known.

### **Demographics of Students with Symptoms**

Certain subsets of medical students appear to be at higher risk for depression and suicide. As mentioned, women medical students have higher rates of suicide than their age mates in the general population. The literature has not addressed demographic markers for depressive symptoms other than to identify female gender as being at increased risk. My



study attempts to document whether other demographic parameters are also associated with depressive symptoms. I found that the students most likely to be experiencing depressive symptoms were women, African-Americans, Asian-Americans and non-heterosexuals. Women were found to be associated with symptoms in both classes individually and when the data was combined. African-American status was associated with moderate symptom levels in the first year class and with severe levels in the second year class. Asian-Pacific Islander status was a predictor of severe symptoms levels in the first year class. Non-heterosexual status was associated with severe symptoms in the second year class only. Clearly, female students are the most likely to have symptoms as they were significantly associated with both moderate and severe levels of symptomology in all classes. The other demographic risk factors were less predictable in that they appeared in one class but not another. I believe it is important to note that the demographic factors associated with high symptoms levels define populations that are subject to discrimination and marginalization in society as a whole and most likely in the medical setting as well. I would like to see other studies with larger sample sizes address whether ethnic and sexual orientation minorities are more likely to be depressed than other medical students. The literature on depression has found that poverty and not ethnicity is a predictor of depression. In my study I used the highest level of parental education as a crude measure of socio-economic status and found that lower levels of parental education were not associated with symptoms. An important caveat to this result is the fact that there was not a large range of parental education levels in this population, it was skewed very heavily towards higher levels of education.

### **Self Identification of Depression**

As a rule, the students with depressive symptoms underestimated their depression status as compared to the BDI rating. The percentage of students who underestimated their status grew as the BDI scores increased. Thus, the more severe the depressive symptoms levels,

the more likely the student was to self-identify as less depressed than their BDI score indicated. This phenomenon may point to a difficulty students have in acknowledging their emotional concerns, especially if they are significant. It may be that students with mild symptoms are less overwhelmed by their condition and can acknowledge it more readily. Students with severe symptom levels may be more likely to be in a state of denial, perhaps because they do not feel safe enough to attend to their distress. They may feel that if they acknowledge their emotional concerns they will be overwhelmed by them and this will interfere with academic work. I do not think this phenomenon of denial is peculiar to medical students, however it may be particularly dangerous in this population. The stresses of medical education are such that students may never have a timely opportunity to address psychological concerns. In other words, if a concern is not addressed as it arises, it may smolder for years under the pressures of continued professional advancement, or it may erupt as an acute crisis. As noted in a previous chapter, suicide as a physician has been found to be related to depression in medical school. Another observation related to lack of acknowledgment of symptoms is that many students, especially younger students, recorded a score of 0 on the BDI, which may be consistent with a complete denial of any emotional concerns.

### **Suicidal Ideation and Anxiety**

Suicidal ideation was present in 9% of the first year students and 11% of the second year class. Women were more likely than men to report both suicidal ideation and anxiety attacks. The normal rate of suicidal ideation is not known. The report of anxiety attacks cannot be related to normal levels either but is a crude measure of stress in the population, reported by 43% of those surveyed.

### **Excessive Use of Drugs or Alcohol**

Students who self-identified as using alcohol or drugs to excess while in medical school appear to be more likely to be less than 26 and to be male. This was not tested with odds ratios. The important finding regarding this data is that the students using alcohol or drugs had BDI distributions similar to the other students; depressive symptoms did not predict excess use of drugs or alcohol.

### **Use of Counseling Services**

The next significant observation from this survey is the fact that the vast majority of students who have high BDI scores are not receiving counseling, either in or out of school. The second year class was less likely to be using counseling than the first, this may be due to the selection bias in this sample or it may reflect an increased level of anger or denial. Students who self-identified as moderately or severely depressed and who had BDI scores congruent with their self assessment were more likely to be using services than students whose BDI scores were lower than their self assessment. Thus, the BDI was a better predictor of use of services than self-report of symptoms.

The literature shows that medical students who are depressed are unlikely to be receiving treatment. It seems self-evident that a person with depressive symptoms and without a strong support network is at risk to develop more serious symptomatology. While counseling is not the only source of support for students, it is one that could impact favorably on the course of depressive illness. My study attempts to outline why students are not utilizing counseling services at their school.

## **Barriers to the Use of Counseling Services**

There is practically no literature on why medical students do not use counseling services at their school. My study demonstrates that over two thirds of students can identify at least one barrier that prevented them from using such services and that the average number of barriers cited was three. A higher percentage of women than men could name barriers. In terms of specific barriers, lack of time to use services was the most commonly cited. This may mean that the services are available at inconvenient hours, that students are overburdened by work and class time, or it may be an excuse that students use to avoid seeking help. Inconvenient hours of operation and excessive work load are both important problems for the administration to investigate.

The next most common barrier was that brought on by the stigma of using mental health services. It is unfortunate that those with mental illness feel a sense of shame, and it is even more unfortunate that this stigma exists within the medical community. I find it frightening that medical students are unable to seek help for depression or any other concerns because they fear judgment. Not only does this mean that they may not find help for themselves it also means that they carry this attitude with them to their patients. This survey documents that students have significant concerns about using counseling services due to stigma, an issue that reflects poorly on the medical community as a whole and the micro environment of UCSF.

The issue of confidentiality was discussed in the previous chapter but the results of this survey indicate that this concern is very real for students and can prevent them from seeking help. Even if the school administration may feel secure in the fact that confidentiality will not be broken in a counseling setting, students appear to need significant reassurances. As mentioned before, the separation of student deans from counseling is crucial so that letters of recommendation are not written by those who have

access to information about counseling use. In addition, concerns about confidentiality exist regarding the student's medical as well as academic record. I believe it is essential that students be able to speak about their emotional concerns without the fear of a diagnosis appearing on their medical record.

A large percentage of students also noted that they felt that using counseling services would indicate they were weak and that this was a deterrent for them. The conviction that admitting difficulties will result in a loss of self esteem can be a powerful force in keeping a person away from counseling. Efforts to combat this might include classroom discussions of the normality of emotional concerns and the commonality of depressive symptoms. This might give the students a framework within which to acknowledge if not normalize their own experience. Several barriers in the low self-esteem domain point to the fact that students have difficulty in valuing their experience. This was especially true of younger students. It may be that younger students do not recognize that they cannot function well without being connected to their emotions. I feel it is imperative that they be encouraged at this stage of their development, both as adults and physicians, to pay attention to and value their emotional experiences.

Several students feared that the use of counseling services would bring unwanted intervention. This may reflect a fear of divulging suicidal ideation or a fear that students will be forced to take time off from school. I believe that the counseling office should not be involved in making decisions about whether students can continue in school other than by making suggestions to the student directly. The issue of suicidal ideation is of course a legal one, but the sensitivity of the provider is crucial in assessing the true suicide risk.

## Summary

The lessons from this and other studies of medical students include that this population has significant levels of depressive symptoms and that these levels increase during training. Symptom levels are more likely to be elevated among women, and in my study, among non-Caucasians and non-heterosexuals. Furthermore, suicide rates among female students and physicians are higher than those of general population and depression during medical school has been shown to predict later suicide.

Students experiencing depressive symptoms are unlikely to use counseling services at their school. This study documents that many students are prevented from using such services due to lack of time, the stigma of using mental health services, concerns over lack of confidentiality and low self esteem issues. These concerns existed in a school (UCSF) with a fairly extensive student health service. It is important to note that there are some medical schools that do not have any counseling services available.

In general, this area of study warrants future investigation in order to lessen the suffering of medical students and for the well being of their future patients.

## Note

The results of this survey were presented in January 1995 to the UCSF Student Health Services Advisory Committee. At that meeting a decision was made to hire another psychologist in order to address the needs of the campus students. A waiting list had developed for students needing counseling and this was an attempt to reduce it. It was obvious from the discussion that financial concerns limit counseling availability, if the administration wants to make a commitment to student mental health more funds will need to be found.

## Works Cited

### Articles

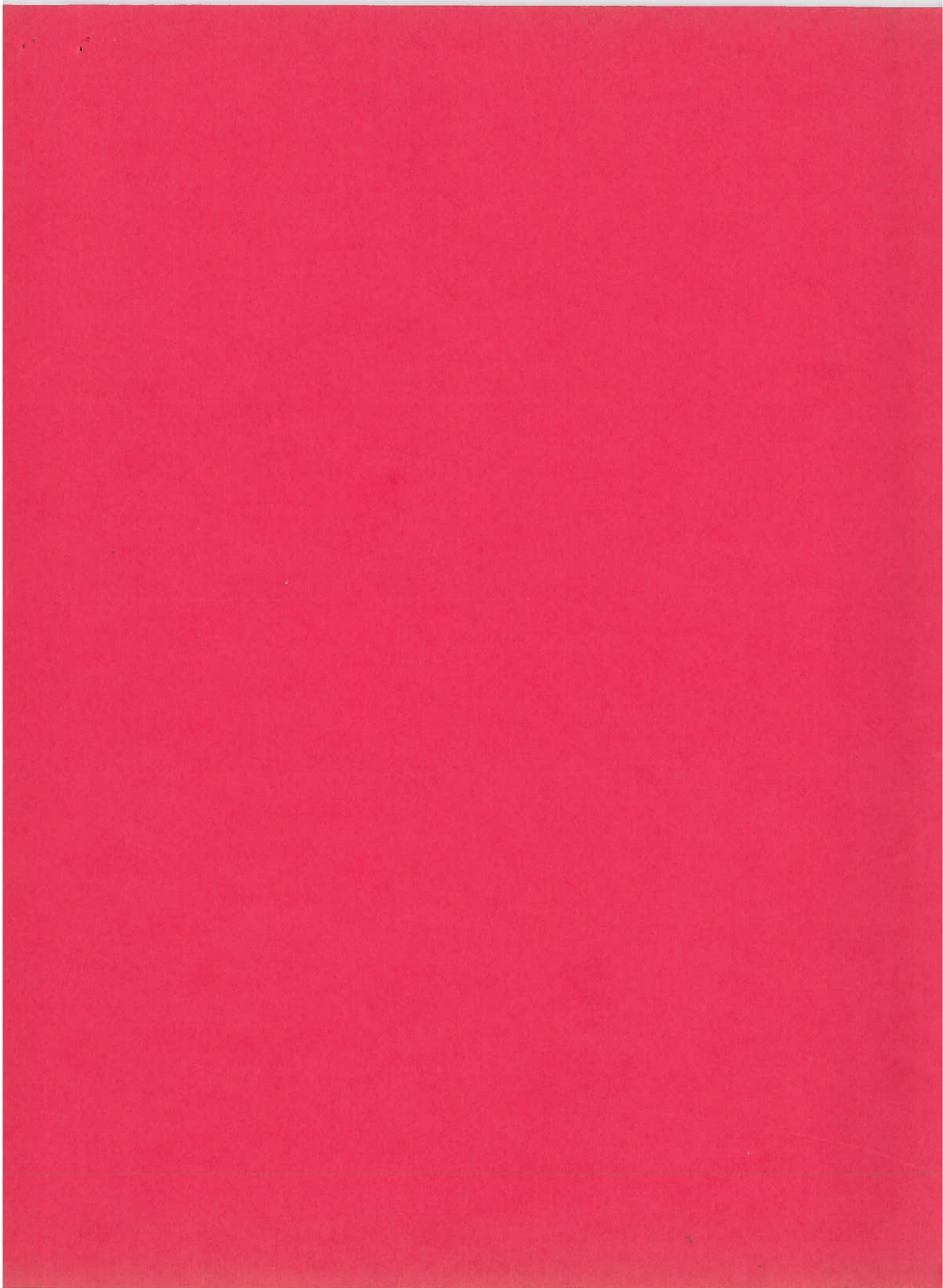
- Akiskal, Hagop., Robert Hirschfeld, and Boghos Yerevanian. The Relationship of Personality to Affective Disorders. Archives of General Psychiatry 40:801-10, 1983.
- Alnaes, Randolf., Sverre Torgersen. Mood Disorders: Development and Precipitating Events. Canadian Journal of Psychiatry 38(3):217-224, 1993.
- Baldwin, De Witt., Steven Daugherty, and Edward Eckenfels. Student Perceptions of Mistreatment and Harassment During Medical School. Western Journal of Medicine 155(2): 140-5, 1991.
- Barnett, Peter and Ian Gotlib. Psychosocial Functioning and Depression: Distinguishing Among Antecedents, Concomitants, and Consequences. Psychological Bulletin 104(1):97-126, 1988.
- Beck, Aaron. and Roy Beck. Screening Depressed Patients in Family Practice, A Rapid Technic. Postgraduate Medicine 52(6):81-5, 1972.
- Beck, Aaron., C.H.Ward, and M. Medelson, et al. An Inventory for Measuring Depression. Archives of General Psychiatry 4:561-71, 1961.
- Belsher, Gayle., Charles Costello. Relapse After Recovery From Unipolar Depression: A Critical Review. Psychological Bulletin 104(1):84-96, 1988.
- Breier, Alan., John Kelsoe, Paul Kirwin, Stacy Beller, Owen Wolkowitz and David Pickar. Early Parental Loss and Development of Adult Psychopathology. Archives of General Psychiatry 45:987-93, 1988.
- Bruce, Martha. and David Takeuchi. Poverty and Psychiatric Status. Archives of General Psychiatry 48(May):470-4, 1991.
- Camp, Lawrence., Merris Hollingsworth, Daniel Zaccaro, Liza Cariaga-lo and Boyd Richards. Does a Problem-based Learning Curriculum Affect Depression in Medical Students? Academic Medicine 69(10, suppl.): 525-7, 1994.
- Cantor, Joel., Laurence Baker and Robert Hughes. Preparedness For Practice: Young Physicians' Views of Their Professional Education. Journal of the American Medical Association 270(9):1035-40, 1993.
- Clark, David., Steven Daugherty, Peter Zeldow, Gerald Gotterer and Donald Hedeker. The Relationship Between Academic Performance and Severity of Depressed Mood During Medical School. Comprehensive Psychiatry 29(4):409-20, 1988.

- Clark, David. and Peter Zeldow. Vicissitudes of Depressed Mood During Four Years of Medical School. Journal of the American Medical Association 260(17): 2521-8, 1988.
- Coburn, David. and Al Jovaisas. Perceived Sources of Stress Among First-Year Medical Students. Journal of Medical Education 50(6):589-95, 1975.
- Cohen, Ronald. The Emotional Problems of Medical Students: Support Groups as a Preventive Mental Health Measure. Journal of American College Health 32(Aug):44-45, 1983.
- Coombs, Robert., Karen Perell, and Marie Ruckh. Primary Prevention of Emotional Impairment Among Medical Trainees. Academic Medicine 65(9):576-81, 1990.
- Craig, Alan. and Ferris Pitts. Suicide by Physicians. Diseases of the Nervous System 29(11):763-72, 1968.
- Davidson, Virginia. Coping Styles of Women Medical Students. Journal of Medical Education 53(11): 902-7, 1978.
- Dickstein, Leah., Judith Stephenson, and Lisa Hinz. Psychiatric Impairment in Medical Students. Academic Medicine 65(9):588-93, 1990.
- Eisenberg, Leon. Treating Depression and Anxiety in Primary Care. The New England Journal of Medicine April 16:1080-3, 1992.
- Epstein, Lynn., Caroline Thomas, John Shaffer and Seymour Perlin. Clinical Prediction of Physician Suicide Based on Medical Student Data. Journal of Nervous and Mental Disease 156(1):19-29, 1973.
- Ficklin, Fred., Jill Hazelwood, James Carter and Robert Shellhamer. Evaluation of a Small-Group Support Program For First-Year Medical Students. Journal of Medical Education 58(10):817-9, 1983.
- Fikar, Charles. Mistreatment of Gay Medical Students (letter). Western Journal of Medicine 156(1):88, 1992.
- Firth, Jenny. Levels and Sources of Stress in Medical Students. British Medical Journal 292(6529): 1177-80, 1986.
- Folse, M., Debra DaRosa and Roland Folse. The Relationship Between Stress and Attitudes Toward Leisure Among First-Year Medical Students. Journal of Medical Education 60(8):610-17, 1985.
- Gaensbauer, Theodore. and George Mizner. Developmental Stresses in Medical Education. Psychiatry 43(1): 60-70, 1980.
- Goetzel, Ronnie., Lila Croen, Steven Shelov, Jo Boufford and Gilbert Levin. Evaluating Self-Help Support Groups For Medical Students. Journal of Medical Education 59(4):331-40, 1984.
- Gold, Philip., Frederick Goodwin and George Chrousos. Clinical and Biochemical Manifestations of Depression. (part 1) The New England Journal of Medicine 319(6):348-53, 1988.



- Grant, Linda. The Gender Climate of Medical School: Perspectives of Women and Men Students. Journal of the American Medical Womens Association 43(4): 109-110, 115-9, 1988.
- Graves, Pirkko. and Caroline Thomas. Habits of Nervous Tension and Suicide. Suicide and Life-Threatening Behavior 21(2):91-105, 1991.
- Hendrie, Hugh., Donna Clair, Henry Brittain and Pamela Fadul. A Study of Anxiety/Depressive Symptoms of Medical Students, House Staff and Their Spouses/Partners. Journal of Nervous and Mental Disease 178(3):204-7, 1990.
- Herzog, David., Jonathan Borus, Paul Hamburg, Ingrid Ott and Adriane Concus. Substance Use, Eating Behaviors and Social Impairment of Medical Students. Journal of Medical Education 62(Aug):651-57, 1987.
- Johnston, Mary Anne. A Model Program to Address Insensitive Behaviors Toward Medical Students. Academic Medicine 67(4):236-7, 1992.
- Jones, Ralph., Lee Badger, Roland Ficken, James Leeper and Russell Anderson. Inside the Hidden Mental Health Network. General Hospital Psychiatry 9:287-93, 1987.
- Kaltreider, Nancy. The Impact of a Medical Student's Suicide. Suicide and Life-Threatening Behavior 20(3):195-205, 1990.
- Katon, Wayne. and Joan Russo. Somatic Symptoms and Depression. The Journal of Family Practice 29(1):65-9, 1989.
- Kelly, Jeffrey., Janet Lawrence, Steve Smith, Harold Hood and Donna Cook . Medical Students' Attitudes Toward AIDS and Homosexual Patients. Journal of Medical Education 62(7):549- 56, 1987.
- Klerman ,Gerald. and Myrna Weissman. Increasing Rates of Depression. Journal of the American Medical Association 261(15):2229-2235, 1989.
- Komaromy, Miriam., Andrew Bindman, Richard Haber and Merle Sande. Sexual Harassment in Medical Training. The New England Journal of Medicine 328(5): 322-6, 1993.
- Kris, Kathryn. Distress Precipitated by Psychiatric Training Among Medical Students. American Journal of Psychiatry 143(11):1432-5, 1986.
- Lloyd, Camille. Sex Differences in Medical Students Requesting Psychiatric Intervention. Journal of Nervous and Mental Disease 171(9):535-45, 1983.
- Lloyd, Camille. and Nanette Gartrell. Sex Differences in Medical Student Mental Health. American Journal of Psychiatry 138(10):1346-51, 1981.
- Lloyd, Camille. and Nanette Gartrell. A Further Assessment of Medical School Stress. Journal of Medical Education 58(12):964-7, 1983.
- Lloyd, Camille. and Nanette Gartrell. Psychiatric Symptoms in Medical Students. Comprehensive Psychiatry 25(6):552-65, 1984.

- Loring, Marti. and Brian Powell. Gender, Race, and DSM-III: A Study of the Objectivity of Psychiatric Diagnostic Behavior. Journal of Health and Social Behavior 29(March):1-22, 1988.
- Marchand, William., Cheryl Ann Palmer , Laurie Gutmann, Walter Brogan III and John R. Pearson. Medical Students' Perceptions of Having Symptoms of Impairment and of the Need to Seek Counseling (Brief). Journal of Medical Education 61(9): 774, 1986.
- Martin, Catherine., Janie Jones and Martha Bird. Support Systems For Women In Medicine. Journal of the American Medical Womens Associaion 43(3):77-8, 83-4, 1988.
- Matthews, W.M/C., M.W. Booth and J.D.Turner. Physicians' Attitudes Toward Homosexuality: Survey of a California County Medical Society. Western Journal of Medicine 144:107-11, 1986.
- Meilman, Philip. Meeting the Mental Health Needs of Medical Students: The Effects of a Peer Support Program. Journal of College Student Personnel 27(4):373-4, 1986.
- Miller, Grant., Elizabeth Miller and Owen Peck. Medical Student Needs Assessment and Student Affairs Programming. Journal of Medical Education 56(6): 518-20, 1981.
- Muller, S. Physicians for the Twenty-First Century. Report of the Project Panel on the General Professional Education of the Physician and College Preparation for Medicine. Journal of Medical Education 59(Nov), 1984. Cited by Gregory Strayhorn, in Effect of a Major Curriculum Revision on Students' Perceptions of Well-Being. Academic Medicine 64(1):25-9, 1989.
- Murphy, Michael., Carol Nadelson and Malkah Notman. Factors Influencing First-year Medical Students' Perceptions of Stress. Journal of Human Stress 10(4):165-73, 1984.
- Nathan, Ronald., Frances Nixon, Leslie Robinson, Lee Bairnsfather, John Allen and Mary Hack. Effects of a Stress Management Course of Grades and Health Of First-Year Medical Students. Journal of Medical Education 62(6):514-7, 1987.
- Nicolson, Paula. and Christopher Welsh. Sexual Harassment, Male Dominated Organizations and the Role of Counselling Psychology: The Case of Medical School. Counseling Psychology Quarterly 6(4):291-301, 1993.
- Notman, Malkah., Patricia Salt and Carol Nadelson. Stress and Adaptation in Medical Students: Who is Most Vulnerable? Comprehensive Psyhciatry 25(3): 355-66, 1984.
- Okasha, A., F. Lotaif and A. Sadek. Prevalence of Suicidal Feelings in a Sample of Non-Consulting Medical Students. Acta Psychiat Scand 63:409-15, 1981.
- Osmond, Humphry., Robert Mullaly and Cymthia Bisbee. The Pain of Depression Compared With Physical Pain. The Practitioner 228((1395):849-53, 1984.
- Pepitone-Arreola-Rockwell, Fran., Don Rockwell and Nolan Core. Fifty-Two Medical Student Suicides. American Journal of Psychiatry 138(2):198-201, 1981.



## Survey

1. In your own estimation, have you ever been seriously depressed?

Yes (1)

Q1 \_\_\_(1)

r Only while in medical school (1)

1A \_\_\_ (2)

r Only before medical school (2)

r Both before and during medical school (3)

No

2. Have you been depressed over the past week?

Yes, severely (3)

Q2 \_\_\_ (3)

Yes, moderately (2)

Yes, mildly (1)

No (0)

3. Have you experienced anxiety attacks while in medical school?

Yes (1)

Q3 \_\_\_ (4)

No (0)

4. Have you ever considered committing suicide?

Q4 \_\_\_ (5)

Yes (1)

No (0)

5. Have you considered committing suicide while in medical school?

Yes (1)

Q5 \_\_\_ (6)

If yes, did you feel that you might take action on this  
thought?

Yes (1)

5A \_\_\_ (7)

No (0)

No

6. Are you currently seeing a psychologist, psychiatrist or counselor on a regular basis?

Q6 \_\_\_ (8)

Yes, within school (1)

(Student Well Being Center, Student Health Service or Langley Porter Clinic)

Yes, out of school (2)

No (0)

7. Do you feel that there are adequate student counseling services at your medical school?

Q7 \_\_\_ (9)

Yes (1)

No (0)

Don't know (9)

8. Have any of the following been barriers to your using the counseling services at your medical school?

Check all that apply

- |   |           |
|---|-----------|
| <input type="checkbox"/> Cost   | Q8__ (10) |
| <input type="checkbox"/> Lack of availability of services                                       | __ (11)   |
| <input type="checkbox"/> Lack of time to use services   | __ (12)   |
| <input type="checkbox"/> Difficulties involved in finding/accessing services                    | __ (13)   |
| <input type="checkbox"/> Fear of lack of confidentiality  | __ (14)   |
| <input type="checkbox"/> Fear that use or a diagnosis will be documented<br>on my school record | __ (15)   |
| <input type="checkbox"/> Concern about lack of sensitivity to cultural issues                   | __ (16)   |
| <input type="checkbox"/> Concern about lack of sensitivity to sexual identity issues            | __ (17)   |
| <input type="checkbox"/> Concern about lack of sensitivity to disability-related issues         | __ (18)   |
| <input type="checkbox"/> Stigma of using mental health services                                 | __ (19)   |
| <input type="checkbox"/> Concern that no one will be able to understand my problems             | __ (20)   |
| <input type="checkbox"/> Feeling that my problems are not important                             | __ (21)   |
| <input type="checkbox"/> Fear that revealing my problems will bring<br>unwanted intervention    | __ (22)   |
| <input type="checkbox"/> Feeling that using services will mean that I am weak                   | __ (23)   |
| <input type="checkbox"/> Other _____  | __ (24)   |

9. Please circle the number beside the statement or statements that best describes how you have been feeling over the past week. If several statements apply equally well, circle each one.

Q9 \_\_ (25)

**A**

- 3 I am so sad or unhappy that I can't stand it.
- 2 I am blue or sad all the time and I can't snap out of it.
- 1 I feel sad or blue.
- 0 I do not feel sad.

**B**

- 3 I feel that the future is hopeless and that things cannot improve.
- 2 I feel I have nothing to look forward to.
- 1 I feel discouraged about the future.
- 0 I am not particularly pessimistic or discouraged about the future.

**C**

- 3 I feel I am a complete failure as a person.
- 2 As I look back on my life, all I can see is a lot of failures.
- 1 I feel I have failed more than the average person.
- 0 I do not feel like a failure.

**D**

- 3 I am dissatisfied with everything.
- 2 I don't get satisfaction out of anything anymore.
- 1 I don't enjoy things the way I used to.
- 0 I am not particularly dissatisfied.

**E**

- 3 I feel as though I am very bad or worthless.
- 2 I feel quite guilty.
- 1 I feel bad or unworthy a good part of the time.
- 0 I don't feel particularly guilty.

**F**

- 3 I hate myself.
- 2 I am disgusted with myself.
- 1 I am disappointed in myself.
- 0 I don't feel disappointed in myself.

**G**

- 3 I would kill myself if I had the chance.
- 2 I have definite plans about committing suicide.
- 1 I feel I would be better off dead.
- 0 I don't have any thoughts of harming myself.

**H**

- 3 I have lost all of my interest in other people and don't care about them at all.
- 2 I have lost most of my interest in other people and have little feeling for them.
- 1 I am less interested in other people than I used to be.
- 0 I have not lost interest in other people.

**I**

- 3 I can't make any decisions at all anymore.
- 2 I have great difficulty in making decisions.
- 1 I try to put off making decisions.
- 0 I make decisions about as well as ever.

**J**

- 3 I feel that I am ugly or repulsive looking.
- 2 I feel that there are permanent changes in my appearance that make me look unattractive.
- 1 I am worried that I am looking old or unattractive.
- 0 I don't feel that I look any worse than I used to.

**K**

- 3 I can't do any work at all.
- 2 I have to push myself very hard to do anything.
- 1 It takes an extra effort to get started at doing something.
- 0 I can work about as well as before.



**L**

- 3 I get too tired to do anything.
- 2 I get tired from doing anything.
- 1 I get tired more easily than I used to.
- 0 I don't get any more tired than usual.

**M**

- 3 I have no appetite at all anymore.
- 2 My appetite is much worse now.
- 1 My appetite is not as good as it used to be.
- 0 My appetite is no worse than usual.

10. Do you feel that you have been using drugs or alcohol to excess while in medical school?

- Yes (1) Q1\_\_(26)
- No (0)

11. What is your gender?

- Male (1) Q1\_\_(27)
- Female (2)

12. What year are you in medical school?

- First (1) Q1\_\_(28)
- Second (2)

13. What is your age?

Q13\_\_(29)

- 23 or younger (1)
- 24-26 (2)
- 27-29 (3)
- 30 or older (4)

14. What is your ethnic identity?

Q14\_\_(30)

- African American (1)
- Asian - Pacific Islander (2)
- Caucasian (3)
- Latino/Latina (4)
- Other (5)

15. What is the highest level of education attained by either of your parents?

- Elementary school (1)
- High School (2)
- College (3)
- Graduate or professional school (4)

Q15\_\_(31)

16. What is your sexual orientation?

- Heterosexual (1)
- Homosexual (2)
- Bisexual (3)
- Unsure (4)

Q16\_\_(32)