

5-28-2015

A Comparative Study on The Stress Levels of Black, White, Asian, and Latino Undergraduate Students

Franklin Dickerson Turner
Kean University

Jeffrey K. Smith
University of Otago

Follow this and additional works at: <https://digitalcommons.uncfsu.edu/jri>



Part of the [Higher Education Commons](#)

Recommended Citation

Turner, Franklin Dickerson and Smith, Jeffrey K. (2015) "A Comparative Study on The Stress Levels of Black, White, Asian, and Latino Undergraduate Students," *Journal of Research Initiatives*: Vol. 1 : Iss. 3 , Article 6.

Available at: <https://digitalcommons.uncfsu.edu/jri/vol1/iss3/6>

This Research Article is brought to you for free and open access by the Journal of Research Initiatives at DigitalCommons@Fayetteville State University. It has been accepted for inclusion in Journal of Research Initiatives by an authorized editor of DigitalCommons@Fayetteville State University. For more information, please contact dballar5@uncfsu.edu.

A Comparative Study on The Stress Levels of Black, White, Asian, and Latino Undergraduate Students

About the Author(s)

Franklin Dickerson Turner is a Lecturer of Psychology at Kean University in Union, NJ. He received his B.S. in African American History from Florida A&M University, M.A. in Educational Psychology from Rutgers University-New Brunswick, and Ph.D. in Urban Systems.

Jeffrey Smith is Professor of Education and Associate Dean for University Research Performance at the University of Otago. Prior to Otago, he was Professor and Chair of the Educational Psychology Department at Rutgers University. He received his A.B. from Princeton University and his Ph.D. from the University of Chicago.

Keywords

Race, Stress, Diversity, Higher Education, Retention

Cover Page Footnote

This article is dedicated to the loving memory of my father the Rt. Reverend Franklin Delton Turner



A COMPARATIVE STUDY ON THE STRESS LEVELS OF BLACK, WHITE, ASIAN, AND LATINO UNDERGRADUATE STUDENTS

Franklin Dickerson Turner and Jeffrey K. Smith

Abstract

Research found that undergraduates who had poor academic performance and experienced depression and anxiety were reported to have encountered higher levels of stress than those students who persisted (Andrews & Wilding, 2004; Bennett, 2003). It also was found that minority students had a higher tendency to experience stress than their counterparts. Although, universities allocate resources to recruit minority undergraduates and provide various types of support, many universities tend to be limited in the resources for handling and detecting stressors among college students. The purpose of this research was to investigate the different levels of stress faced by minority college students and also to take a systematic look at levels of stress as reported by Black, White, Asian, and Latino students at a major urban university on the East Coast of the United States. The findings indicated no significant differences in the stress levels in regards to students' ethnicity. It is imperative that college recruiters understand that although students may be diverse in their ethnicity, they also arrive on campus from diverse family backgrounds, meaning that a large percentage come from low income homes and many are first-generation college students. Therefore, academic leaders should consider creating programs and interventions that would provide support for students who are members of these underrepresented groups.

Introduction

Over the last, few decades there has been an imbalance of successful academic outcomes based on racial, ethnic, and low socio-economic status among college students. This imbalance or gap is measured by grade point average, dropout rate, college enrollment, and college completion rate, reported among minority groups of students. The academic performance among Black, Latino, and economically disadvantaged students are lower when compared to their White, Asian and more economically privileged counterparts. The disparity in the level of academic performance has been at the heart of social commentary, research, and controversy for decades (Harper, 2006; Harper, Carini, Bridges, & Miller, 2007). The collegiate achievement gap is a pressing issue not only in education but also in our society, as a whole. Currently there are more Black undergraduates enrolled in college than ever before, however, the graduation and retention rates of Black students when compared to White students, continues to be at an overwhelming low. Recent figures show that the national college graduation rate for Black college students is 43 percent, which is 20 percent lower than the 63 percent rate for White students (Journal of Blacks in Higher Education, 2007).

Several factors influence the graduation rates of Black students on college campuses. Racism or racial tendency was reported as one of the major factors, according to minority students, that caused stress while attending college. Students who perceived a certain level of

racism on campus expressed feelings of depression, isolation, angry, anxiety, and disengagement from their college communities. These feelings led some students to underachieve or dropout of college. Ouimette, White, Colder, and Farrow (2011) found that stress occurred more often among freshmen, due to the newfound freedom and responsibilities during the beginning of their college careers. The authors discovered that 66% of incoming college students surveyed had experienced some form of life traumas prior to attending college. Previous exposure to stress can elevate stress in the college setting if a similar situation is recalled. Students who have experienced traumatic incidents may suffer from elevated stress levels. When a student has experienced prior stress, the effects of additional stressors can be magnified.

Ragsdale, Beehr, Grebner, and Han (2011) found that stressors are common in academic settings and are mostly associated with psychological strain. When individuals endure a stressful situation, time is needed to recover or heal from the event to prevent another episode. The researchers found that it was imperative for students to allot time for themselves. This is necessary in order to diminish stress that occurs during the rigors of college life. This finding suggested that weekends were great times to reduce stress. College students need to cope with psychological and social changes that are associated with attending college and their new independence. The years that young people attend college can be a very sensitive time of life, and this phase of young adults' life is a time where concerned parties should develop and implement support systems and interventions to lessen mental problems (Gjerde, 1993). College or university departments such as counseling centers, student life departments, student support programs, multicultural affairs, and student housing, should be those sources of intervention.

Research suggesting that college students are susceptible to mental health problems has spawned increased public concern in the western hemisphere (Stanley & Manthorpe, 2001). Prior scholarly investigations have found high rates of psychological morbidity, particularly in the levels of depression and anxiety, among college students globally (Stewart-Brown, Evans, Patterson, Petersen, Doll, Balding, & Regis 2000; Voelker, 2003). Psychological morbidity (distress) among college students is an overlooked public health problem, which can have a major impact on students, campus health services, and mental health policy-making (Stewart-Brown et al., 2000). There is a need for a higher level of understanding of the effect of psychological morbidity on the educational attainment of college. Undergraduate students have to cope with stress from several different areas of their lives (Mangold, Veraza, Kinkier, & Kinney, 2007). College students have to adapt to college life, while carrying out developmental tasks, and handling unexpected societal events, which all play a significant role in increasing students' stress levels and adding to the development of physiological issues (Serlachius, Hamer, & Wardle, 2007) and psychological difficulties (Bell and D'Zurilla, 2009). Academic stress is the preeminent stressor of undergraduates (Deroma, Leach, & Leverett, 2009; Ross, Niebling, & Heckert, 1999). The transition from high school to college and from adolescent to independent adulthood (Serlachius, Hamer, & Wardle, 2007), along with perceived life stressors produces overall stress with different levels of intensities and magnitudes (Lunney, 2006; Sowa, 1992).

Researchers in the fields of education and psychology for decades have studied the psychological and educational phenomena among college students; recently there is mounting research data that suggest that the college student population is very distinctive in regards to their stage of human development and culture (Arnett, 2000; Sher & Gotham, 1999). Young people between the ages of 18-24 years old account for one-third of the college population in the United States (U.S. Bureau of the Census, 2012) which suggests a necessity for the examination of the psychological phenomena among undergraduates. The process of leaving high school and in many cases leaving their family's home to live on-campus or closer to campus, placing them in unfamiliar surroundings, roles, relationships, and facing the unknown of becoming a member of

their college's community is very stressful. Undergraduates are faced with creating new friendships, new relationship with adults in authority, while successfully handling the academic rigors of college coursework and in some case still having responsibilities at home i.e. caring for family members or other family responsibilities.

Males and females experience stress differently (Baker, 2003; Lee, Keough, & Sexton 2002), and frequently vary in how they experience, perceive and handle stressful life events (Burke & Weir, 1978). Currently, there is little research as to whether or not gender is a moderator of student stress; however, there is research on how male and female students handle academic stress (Baker, 2003; Lee et al., 2002). Variations in the perception of stress have been correlated with gender differences and social connectedness (Baker, 2003; Lee et al., 2002). Male students who report having a lower level of social connectedness described having a more negative appraisal of campus life than female students (Lee et al., 2002). The researchers provided the explanation for the gender difference between stress and social connectedness stating that males typically are more independent, while females have a tendency to be interdependent. Yet, social connectedness was increasingly correlated with perceived level of stress for both male and female students (Lee et al., 2002).

In 1993, Holmbeck and Wandrei investigated the social supports given by parents and personality variables and found that the lack of family cohesiveness, attachment, instrumentality, self-esteem, and parental social support were all predictors of anxiety and depression. Female students who reported greater levels of family support had lower levels of anxiety and depression. Male students who reported lower family support reported higher levels of depression and anxiety. The attachment to their parents and the support given by parents were key predictors of positive adjustment to university life. Male students who lived at home during their transition to college reported the least amount of stress (Lafreniere, Ledgerwood, & Docherty, 1997). Male and female undergraduates who perceived a high level of support from their families were more inclined to report high levels of adjustment to university life, regardless of whether or not they moved away from home for the first time to attend college. Students who reported low levels of family support showed different levels of adjustment to college life based on gender and living arrangements during their transition. Females who lived away from home during the transition to college life had a significantly healthier adjustment, but males appeared to have a healthier adjustment when they continued to live at home. The social support an undergraduate received from their family seemed to have different degrees of influence on females and males in facilitating a healthy adjustment to college life (Lafreniere et al., 1997).

There is limited research on the levels of stress faced by undergraduate, first generation, low socioeconomic college students who attend major universities with a significant minority student population. Fortunately, this exploration is essential as it is becoming the norm in regards to student population, which is a student body that is racially and socioeconomically diverse. One might expect this should be an area of greater concern, given the unprecedented level of racial diversity currently enjoyed in the United States.

This study focused on an urban public university with a long history of racial diversity among its student population, as well as serving a large number of first generation college students, mostly from low-socioeconomic status families. Given that the students at this urban university have similar backgrounds in terms of being first generation students, and from similar socio-economic backgrounds, the question arises as to whether they bring different levels of stress, either long term, or short term to the college environment. Thus, the following two research questions guided this study:

1. Is there a significant difference in the stress levels of undergraduate students based on race/ethnicity at an urban public university as reported from the Student Stress Scale?

2. Is there a significant difference in the long-term and short-term stress levels of Black, White, Asian, and Latino undergraduate students as reported from the Student Stress Scale?

Methodology

The participants were 410 undergraduate students who were enrolled at a state university in the New York City Metropolitan area. In this study, female students accounted for 264 of the participants with male students consisting of 146. In terms of ethnicity of the undergraduates who participated 42 were Asian, 98 were Black, 101 were Latino, and 162 were White. The participants' ages ranged from 18-44 with a mean age of 21.8. The participants were freshman, sophomore, junior and senior undergraduate students from a variety of majors. The university's overall undergraduate enrollment by race/ethnicity was 6% Asian, 19% Black, 24% Latino and 39% White. Female students accounted for 59% of the student population with male students consisting of 41% of the student population.

The undergraduate students who took part in this study were enrolled in classes that were randomly selected to participate in this study. The researchers randomly selected 25 classes from all the classes offered at the university during the fall 2013 semester. After gaining permission from the instructors of record prior to coming to the class to recruit students, the researchers explained the study to all classes and gave students the chance to ask questions about the study. Students who choose to volunteer to participate in the student signed a consent form and answered the questions on the Student Stress Scale.

Instrumentation

The Student Stress Scale is an adaptation of the Holmes and Rahe's Social Readjustment Rating Scale done by Insel and Roth, 1988. The Student Stress Scale was used to measure the stress levels among the participants. The scale consisted of one column containing thirty-one (N=31) possible stressful events that students may have faced during a specified period. The Student Stress Scale was adapted for this study to measure long-term stress (entire life) and short-term stress (past two-years), so the scale participants were given had two columns with 31-stressful events in each column. Each stressful event had a score associated with it ranging from 100-200 points that represented the amount of readjustments a person had to make in their life from enduring a stressful event. The scale yielded a total life change units (LCUs), which provided a number representing a person's possible level of health risk associated with stress.

Results

The researchers analyze the long-term and the short-term stress of the participants. There was a large number of eigenvalues greater than one in the two analyses. This is a standard technique for determining the number of factors to retain in an analysis. There were ten such eigenvalues in the long-term stress measure and eleven in the two-year stress measure. Using a scree plot, five factors looked like a reasonable number of factors to rotate in the two analyses. Looking at a varimax rotation, some of the factors were fairly reasonable, but there were no clear cut factors that seemed worth further pursuit. Following the factor analysis, the researchers decided to work with the total scores for both scales in subsequent analyses. The researchers ran a reliability analyses on the scales using coefficient alpha. Reliability for the long-term stress scale was .77, and for the two-year stress scale was .71. These levels of reliability are good for research purposes, but not particularly strong. One of the main issues with the factor analytic results is that some of these stressors simply have no logical reason for correlating with one another. A death of a close family member bears no logical relationship to losing one's job, etc., except to the degree that both incidents generate stress.

The next analysis addressed the basic question of the study; are there significant differences among ethnic groups of college students in terms of the stress they experience. To investigate this question, the researchers ran a two-way multivariate analysis of variance with long-term and short-term stress as the dependent measures and ethnicity and gender as the independent variables. Gender was included as the information was available and it was apparent that gender differences or interactions between gender and ethnicity would be found.

The finding showed a significant difference in regards to ethnicity (Wilk's Lambda, 6, 722 df, $F = 2.343$, $p = .030$), but no significance for gender or the interaction between gender and ethnicity. To look further at this, a Univariate ANOVA was run for each of the stress measures. The researchers found that the ANOVA for the long-term stress was significant ($F, 3, 387 = 3.546$, $p = .015$). Neither gender nor the interactions were significant. The ethnic group reporting the highest level of stress were the White students ($M = 552.20$, $SD = 204.98$), followed by Black students ($M = 525.64$, $SD = 213.57$), Asian students ($M = 487.28$, $SD = 183.706$), and Latino students ($M = 477.04$, $SD = 241.17$). The partial eta squared index of effect size for ethnicity was .027, indicating that the differences among the groups were not very large. In fact, the mean difference between the most stressed group and least stressed group was only about a third of a standard deviation. Fundamentally, the differences in stress among these groups were significantly low. Descriptive statistics can be found in table 1.

Based on the differences among groups, the most interesting aspect of the findings is reported by the 410 college students who participated in the study. Below are the frequencies of reported long-term stressors:

Trouble with parents:	217 students
Change in financial status:	210 students
Fired from job:	80 students
Change in health of family member:	241 students
Pregnancy:	50 students
New boyfriend or girlfriend:	244 students
Death of a close family member:	319 students
Death of a close friend:	144 students

Table 1

Descriptive Statistics for the Student Stress Scale

Race/Ethnicity	Means	Standard Deviation	n
Asian	487.28	183.706	42
Black	525.64	213.57	98
Latino	477.04	241.17	101
White	552.20	204.98	162

Discussion

The differences among the four ethnic groups studied at the urban university indicated that differences in long-term stress, while statistically significant, were not significant in absolute terms. The differences in short-term stress were not significant. Although the differences among groups suggest that these students were more similar than different, that does not mean that their lives were not filled with stress. In fact, there were serious levels of stress reported among students. With increasing college populations including students of direct African and Caribbean descent, from low SES family's and first generation college students, more attention needs to be given to the stress issues that could hinder their retention and graduation.

The Asian, Black, and Latino category of students is an aggregate for these highly diverse ethnic populations that include a large amount of subgroups. Socio-demographic uniqueness and levels of acculturation for the members of each of these subgroups has its own distinct issues and challenges to overcome. Thus, prevention or intervention programs have to account for these diverse characteristics of these cultures (Makimoto, 1998). A large quantity of cultural subgroups exists within the Black and Latino racial/ethnic groups. Asian, Black, and Latino students are not homogeneous groups, meaning that their language, nationality and cultural backgrounds are extremely diverse within these groups. The historical disenfranchisement and length of residency in the U.S. has an impact on the socioeconomic and health status for each of these subgroups. Socioeconomic status influences the psychological wellbeing of college students (Makimoto, 1998; Reeves and Bennett, 2004).

Chavez and French (2007) found that discrimination, stereotype confirmation, and conformity within one's own group are all stressors college students have identified in the context of their race or ethnicity. Students' perception of discrimination, especially discrimination from faculty, staff and administrators that is directed towards students of color is a significant stress triggering factor for minority and underrepresented college students (Hwang & Goto, 2008). Although this study had limitations, the overall findings suggest that serious levels of stress existed among students.

Stress on college campuses has shown to be strongly related to many negative outcomes and emotions for undergraduate students, such as dropping out, poor academic performance, depression, and anxiety (Andrews & Wilding, 2004; Bennett, 2003). The findings from this study showed a significant number of undergraduate students who reported high levels of stress. The results of this study found no significant differences in the stress levels based on race. Universities and colleges that service diverse student populations with a large percentage of low-socio-economic and first-generation college students should consider looking more closely at the racial and ethnic subgroups, such as students of African-American, African and Caribbean descent to ensure they are creating programs and interventions for students who are members of these underrepresented groups. Previous studies (Finkelstein, Kubzansky, Capitman, & Goodman, 2007; Goodman, McEwen, Dolan, Schafer-Kalkhoff, & Adler, 2005) explored the racial and socioeconomic differences of stress on adolescents, which found higher levels of stress among Black students, adolescents from lower SES families, and students with lower perceived socio-economic status. Finkelstein, Kubzansky, Capitman, and Goodman, 2007 found that adolescents whose parents had lower levels of education were less optimistic than teenagers from families with parents who had higher levels of education. A lower level of optimism may be a conduit that increased the level of stress in lower socio-economic status adolescents. Goodman, McEwen, Dolan, Schafer-Kalkhoff, and Adler, 2005 reported that adolescents who were socially disadvantaged tended to have increased levels of stress, irrespective of whether the disadvantage was associated with the adolescents' race, ethnicity, or socio-economic status. The authors found that being Black and having parents with low levels of education were directly related to increased stress during adolescences.

In this study, White students reported higher levels of stress than Asian, Black, and Latino students. However, it should be noted that the Student Stress Scale is a general measure of stress and does not include stressful events associated with racism, bias, or assimilation into the majority culture. White students would most likely not have to deal with any of the three levels of racism, such as (a) institutional, (b) personal, and (c) internal; especially institutionalized and internalized. Nevertheless, Black students are exposed to all three levels of racism, which could add stress to their lives on campus. Even though these students attended a racially diverse university, the student population was still majority White. Had the Student Stress Scale included possible stressful events related to racism, bias, or assimilation to the majority culture, Black students may have reported higher levels of stress. Further research is needed to better understand how racism and assimilation into the majority culture contributes to the stress of Black and low socio-economic status adolescents. Therefore, an assessment scale to measure the racial climate of a campus could be a powerful tool to aid universities in further supporting all students.

References

- Andrews, B., & Wilding, J. M. (2004). The relation of depression and anxiety to life-stress and achievement in students. *British Journal of Psychology*, 95(4), 509-521.
- Baker, S. R. (2003). A prospective longitudinal investigation of social problem-solving appraisals on adjustment to university, stress, health, and academic motivation and performance. *Personality and Individual Differences*, 35, 569-591.
- Bennett, R. (2003). Determinants of undergraduate student drop out rates in a university business studies department. *Journal of Further and Higher Education*, 27(2), 123-141.
- Burke, R. J., & Weir, T. (1978). Sex differences in adolescent life stress, social support, and well-being. *The Journal of Psychology*, 98(2), 277-288.
- Bynum, M. S., Burton, E. T. & Best, C. (2007). Racism experiences and psychological functioning in African American college freshman: his racial socialization a buffer? *Cultural Diversity and Ethnic Minorities Psychology*, 13, 64-71.
- Chavez N. R., & French, S. E. (2007). Ethnicity-related stressors and mental in Latino Americans: The moderating role of parental racial socialization. *Journal of Applied Social Psychology*, 37, 1974-1998.
- Clark, R., Anderson, N.B., Clark, V. R., & Williams, D. R. (1999). Racism as a stressor for African Americans: A biopsychosocial model. *American Psychologist*, 54, 805-816.
- Davis, J. E. (1994). College in black and white: Campus environment and academic achievement of African-American males. *Journal of Negro Education*, 63, 620-633.
- Finkelstein, D. M., Kubzansky, L. D., Capitman, J., & Goodman, E. (2007). Socioeconomic differences in adolescent stress: The role of psychological resources. *Journal of Adolescent Health*, 40(2), 127-134.
- Goodman, E., McEwen, B. S., Dolan, L. M., Schafer-Kalkhoff, T., & Adler, N. E. (2005). Social disadvantage and adolescent stress. *Journal of Adolescent Health*, 37(6), 484-492.
- Harper, S. R (2006). Black male students at public flagship universities in the U.S. status, trends, and implications for policy and practice. Joint Center for Political and Economic Studies Health Policy Institute, Washington, DC. Retrieved [October 31, 2007] from <http://www.jointcenter.org/publications1/publication-PDFs/Dellums%20PDFs/ShawnHarper.pdf>
- Harper, S. R (2006). Peer support for African-American male college achievement:

- Beyond internalized racism in the burden “acting white”. *Journal of Men’s Studies*, 14(3), 337-358.
- Harper, S. R., Carini, R. M., Bridges, B. K., & Hayek, J.C. (2004). Gender differences student engagement among African American undergraduates at Historically Black Colleges and Universities. *Journal of College Student Development*, 45(3), 271-284.
- Holmbeck, G.N., & Wandrei, M.L. (1993). Individual and relational predictors of adjustment in first-year college students. *Journal of Counseling Psychology*, 40, 73–78.
- Hwang, W. C., & Goto, S. (2008). The impact of perceived racial discrimination on the mental health of Asian American and Latino college students. *Cultural Diversity and Ethnic Minority Psychology*, 14 (4), 326– 335.
- Insel, P., & Roth, W. (1988). Core concepts in health. Mountain View, CA: Mayfield.
- Jones, C.P. (2000). Levels of racism: a theoretical framework and a gardener’s tale. *American Journal of Public Health*, 90:1212-1215.
- Journal of Blacks in Higher Educations,
<http://www.jbhe.com/preview/winter07preview.html> retrieved July 2012.
- Knapp, L.G., Kelly-Reid, J.E., Whitmore, R.W., & Miller, E. (2007). Enrollment in Postsecondary Institutions, Fall 2005; Graduation Rates, 1999 and 2002 Cohorts; and Financial Statistics, Fiscal Year 2005 (NCES 2007-154). U.S. Department of Education. Washington, DC: National Center for Education Statistics. Retrieved August 2014 from <http://nces.ed.gov/pubs2007/2007154.pdf>
- Lafreniere, K.D., Ledgerwood, D.M., & Docherty, A.L. (1997). Influences of leaving home, perceived family support, and gender on the transition to university. *Guidance and Counseling*, 12, 14–18.
- Lee, R. M., Keough, K. A., & Sexton, J. D. (2002). Social connectedness, social appraisal, and perceived stress in college women and men. *Journal of Counseling & Development*, 80(3), 355-361.
- Makimoto, K. (1998). Drinking patterns and drinking problems among Asian-Americans and Pacific Islanders. *Alcohol Health & Research World*, 22, 270-275.
- McCoy, M. L., & Sherman, R. F. (1994). Bridging the divides of race and ethnicity. *National Civic Review*, 83(2), 111-119.
- Miller-Keane. (2008). Stress-definition of stress in the medical dictionary. Retrieved from <http://medical-dictionary.thefreedictionary.com/stress>
- Ragsdale, J. M., Beehr, T. A., Grebner, S., & Han, K. (2011). An integrated model of weekday stress and weekend recovery of students. *International Journal of Stress Management*, 18(2), 153-180. doi:10.1037/a0023190
- Ratanasiripong, P., Burkey, H. & Ratanasiripong, N. (2009). Stress and substance use among Asian American and Latino College Students. *College Student Journal*. 43 (4), 1253-1259.
- Read, J. P., Ouimette, P., White, J., Colder, C., & Farrow, S. (2011). Rates of DSM–IV–TR trauma exposure and posttraumatic stress disorder among newly matriculated college students. *Psychological Trauma: Theory, Research, Practice, and Policy*, 3(2), 148-156.
- Reeves, T., & Bennett, C. E. (2004). We the people: Asians in the United States (Census 2000 Special Reports). Washington, DC: U.S. Census Bureau.
- Shields, N. (2001). Stress, active coping, and academic performance among persisting and nonpersisting college students. *Journal of Applied Biobehavioral Research*, 6(2), 65-81.
- Spenner, K., Buchmann, C. and Landerman, L.R. (2005). The Black-White achievement gap in

- the first college year: evidence from a new longitudinal case study.. In D. Bills and A. Portes (Eds.), *Research in Social Stratification and Mobility* , 22 , (pp. 187-216). New York: Elsevier.
- Stewart-Brown S., Evans J., Patterson J., Petersen S., Doll H., Balding J., & Regis, D. (2000). The health of students in institutes of higher education: An important and neglected public health problem? *Journal of Public Health Medicine* 22(4), 492-499.
- Voelker, R. (2003). Mounting student depression taxing campus mental health services. *Journal of America Medical Association*, 289 (16), 2055-2056.