

Financial Distress, Anxiety, Depression, and Suicide among American College Students

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Abstract

Introduction: Despite the established link between financial distress as a proxy of poor Socio-Economic Status (SES) and poor mental health in the general population, less is known about this link on college campuses in the United States. In a national sample, the current study investigated the associations between financial distress and poor mental health of American undergraduate college students.

Methods: Data came from the Healthy Mind Study (HMS, 2016–2017), a national mental health survey of college students in the U.S. The current analysis included 3,598 adult undergraduate college students who were enrolled full time to a bachelor's degree, were not an international student, and did not identify as a sexual minority. Main independent variable was financial distress and first-generation status. Covariates were age, gender, race, ethnicity, year in the program, and transfer status. Outcomes were symptoms of anxiety, depression, and suicidal ideation. Linear regression models were applied for data analyses.

Results: Financial distress but not first-generation status were associated with higher symptoms of anxiety, depression, and suicide. The effects of financial distress on symptoms of anxiety, depression, and suicidal ideation were independent of all covariates.

Conclusions: College students with financial difficulty are at an increased risk of anxiety, depression, and suicide. Mental health promotion programs should specifically address mental health needs of low SES students including individuals with financial difficulties.

Keywords: College Students, Socioeconomic Status, Financial Distress, Depression, Anxiety, Suicide

Introduction

Transition to college is being considered as a source of stress for many students, which requires effective adjustment [1,2]. One major source of stress among students who attend college is academic stress [3]. Other sources of stress for college students include separation from family/friends, intimate relations, an increase in individual responsibility, and employment-related stress [4]. Financial stress is another source of stress for college students [5-7]. Such stressors increase college students' likelihood of mental health disorders [1]. Given the ubiquity of stressors in the daily lives of college students, we need to identify various psychosocial risk factors and processes that distinguish high risk from low risk college students regarding likelihood of developing mental health problems [1,5].

As a result of multiple sources of stress, many college students are at risk of multiple

mental health problems [4]. Anxiety, depression, and suicidal behaviors are among the most prevalent mental problems on college campuses [1]. Affecting 12% of all college students, anxiety, which can manifest as generalized anxiety disorders, post-traumatic stress disorder, social phobia, or other types of anxiety, is probably the most prevalent mental health problem on college campuses [8,9]. Affecting 9% of students, depression is the second most frequent mental health problem on college campuses [8,10]. Affecting 7% of college students, suicidal ideation is another common mental health problem on US campuses [11]. As symptoms of anxiety, depression, and suicide co-occur [12–19], common risk factors may be involved as underlying mechanisms that their risk [20,21].

In addition to stress [5–7], a wide range of social identities such as race [22,23], gender [24], sexual orientation [25], may predict poor mental health of college students [26]. In addition to these factors, social isolation [28–30], social relations [30] violence victimization [31,32] and transfer status [33] also impact psychological wellbeing of college students. Finally, SES indicators such as parental education [34,35], and financial hardship [24,36] have strong effects on the mental health of college campuses. Only a small number of studies have specifically focused on the effect of financial distress as a risk factor for mental health problems of college students.

To fill the gap in the literature on the social determinants of mental health on college campuses, data of a national study of college students' mental health [37,38] was used to investigate the effects of financial distress on symptoms of anxiety, depression, and suicidal behaviors among college students.

Methods

By using a cross-sectional design, this study borrowed existing data from the Healthy Mind Study (HMS), 2016–2017. The HMS is an online mental health survey of college students in the US. As an annual web-based survey, HMS monitors mental health of undergraduate and graduate students in the US. The study collects rich data on SES, mental health status, mental service utilization, and common barriers against health care use (stigma, trust, etc.) [37,38]. Since 2007, HMS has been collecting data from more than 150 US colleges/universities, with more than 175,000 participants. The HMS has three standard survey modules: 1) demographic module, 2) mental health module, and 3) mental health service module. The HMS is conducted annually. The current analysis used HMS 2016–2017 data.

The HMS study protocol was approved by the University of Michigan (UM) Institutional Review Board (IRB). The study protects its participants with a Certificate of Confidentiality received from the National Institutes of Health (NIH). All participants provide informed consent. The survey was performed anonymously.

To recruit the HMS sample, students were invited to participate in the study via electronic mail. The emails were mostly sent either within the first 2 weeks of the

semester, the last week of the semester, and the major holidays. Non-responders were contacted up to three times. Two to four days were spaced between email reminders. Each email communication contained a URL which directed the students to the survey measure.

Each participating school / college were asked to provide a random sample of enrolled students. Large schools and universities provided a random sample of 4,000 students (per university / school). Smaller schools, however, used a census sampling method (invite all students).

Exclusion criteria in this study were 1) not reporting a race / ethnicity, 2) being an international student, 3) being enrolled part-time, and 4) being enrolled to an associate or a graduate degree. Inclusion criteria were 1) being an adult (age 18 or more) and 2) being in a full-time enrolment. Sexual minority individuals were omitted from this study. Sexual orientation was measured using the following item: "How would you describe your sexual orientation?". Responses include heterosexual, lesbian, gay, bisexual, queer, questioning, and others. Only individuals who were identified as heterosexual were entered to this study and any individuals with any other responses including lesbian, gay, bisexual, queer, questioning, and others were excluded.

The study variables were as below: race, ethnicity, gender, age, first generation status, financial distress, transition status, and mental health outcomes namely anxiety, depression, and suicidality.

Independent Variable:

Financial Distress. Current level of financial difficulty was measured using a single item measure: "How would you describe your financial situation right now?" The responses included 1) Never stressful, 2) Rarely stressful, 3) Sometimes stressful, 4) Often stressful, and 5) Always stressful. This variable was coded as a numerical variable ranging from 1 to 5, with a higher score indicating a higher level of financial distress.

Covariates:

Race/Ethnicity. Race/ethnicity were measured as the following seven dichotomous variables 1) White, 2) African American or Black, 3) American Indian or Alaskan Native, 4) Asian American or Asian, 5) Hispanic or Latino, 6) Native Hawaiian or Pacific Islander, 7) Middle Eastern, Arab, or Arab American. As individuals could self-identify with more than one racial and ethnic group, we did not consider Whites as the reference group. Instead, each effect size reflects the effect of that race compared to lack of such race (instead of Whites).

Demographic variables. Gender and age were the demographic characteristics in this study. Age was a continuous measure. Gender was treated as a dichotomous variable (male 0 female 1).

First Generation Students. We defined first generation status by asking participants about the highest level of their parents. The question was: "What is the highest level of education completed by your parents or stepparents?" Same question was asked from each parent. Then, the highest level of education of the parents was calculated. Responses were 1) 8th grade or lower, 2) Between 9th and

12th grade (but no high school degree), 3) High school degree, 4) Some college (but no college degree), 5) associate's degree, 6) Bachelor's degree, and 7) Graduate degree. First generation was treated as a dichotomous variable defined as individuals who were from families in whom none of the parents had completed a bachelor's degree.

Transfer Status. Participants were asked "Did you transfer from another campus/institution to this school?" Responses included 1) "Yes, I transferred from a community or junior college", 2) "Yes, I transferred from a 4-year college or university", and 3) No. This variable was treated as a dichotomous variable (1 = transfer student, 0 = non-transfer student).

Dependent Variables:

Symptoms of Anxiety. The 7-item Generalized Anxiety Disorder (GAD) scale was used to measure general anxiety [39]. The GAD scale is a self-report questionnaire that identifies probable cases of GAD. The GAD scale measures severity of anxiety symptoms over the past two weeks [39,40]. GAD-7 is developed based on the anxiety symptoms according to the DSM-IV diagnostic criteria. Participants are asked if during the last 2 weeks, they have experienced any of the seven core symptoms of GAD. Item responses range from "not at all," to "nearly every day" (0 to 4). A total score in which a higher score reflected higher GAD symptoms was calculated. The variable was treated as a continuous measure. GAD-7 has high reliability as well as validity both in clinical and population sample [41].

Symptoms of Depression. The HMS applied the Patient Health Questionnaire (PHQ-9) to measure depression. Participants were asked about their emotional experiences in the past 2-week period with the highest symptom levels: "Think about the two-week period in the past year when you experienced the two problems below the most frequently. During that period, how often were you bothered by these problems?" Some example PHQ items included "Little interest or pleasure in doing things", and "Feeling down, depressed, or hopeless". Items were on a four-level scale ranging from 0 to 3 ("none" to "nearly every day"). A total score in which a higher score was indicative of more depressive symptoms was calculated [41].

Suicidal Behaviors. There items were used to measure suicidal behaviors: 1) "In the past year, did you ever seriously think about committing suicide?", 2) "In the past year, did you make a plan for committing suicide?" and 3) "In the past year, did you attempt suicide?" These items cover suicidal ideation, plans, and attempts. Items used a yes/no response scale. These items were used in the National Comorbidity Survey (NCS) [42,43]. This variable was operationalized as an interval variable ranging from 0 (no suicidal behaviors) to 3 (multiple suicidal behaviors).

Stata 15.00 was used for data analysis. To describe the sample, frequency tables (%) and means (SD) were reported. Multivariable linear regression models for our multivariable analysis were run. In the linear regression models, financial distress was the independent variable, age, gender, race, ethnicity, transfer status, and first-

generation status were covariates, and symptoms of anxiety, depression, suicidal ideation were the outcomes. Adjusted b (regression coefficient), standard error (SE), 95% confidence interval (CI) for b, and p values were reported.

Results

Descriptive Characteristics:

This study included 3598 individuals. Descriptive characteristics of the sample are shown in Table 1.

Anxiety:

Table 2 summarizes the results of *Model 1* that had symptoms of anxiety as the outcome. Financial distress was positively correlated with symptoms of anxiety (Table 2).

Depression:

Table 3 provides a description of *Model 2* that had suicidal behaviors as the outcome. The only other factor positively correlated with suicidal behaviors was financial distress (Table 3).

Suicidal behaviors:

Table 4 shows the results of *Model 3*, a linear regression model with financial distress as the independent variable and suicidal ideation as the outcome. Students with higher financial distress reported more suicidal ideation (Table 4).

Discussion

This study had two main findings. First, financial distress but not first-generation status was associated with all three indicators of poor mental health of college students, namely symptoms of anxiety, symptoms of depression, and suicidal behaviors. First generation but not financial distress was a risk factor for social isolation.

A wide range of social and psychological factors increase risk of poor mental health (anxiety, depression, and suicide) among college students [44,45]. Race [22,23], gender [24], sexual orientation [25,26], social isolation [27-29], social relations [28-30], violence victimization [31,32] and transfer status [33] impact the mental health of college students. Family education [31,32] and financial status [24,36] are shown to affect mental health of college students. The current study introduces financial stress as a risk factor for poor mental health of college students. This result is in line with what we know on the role of stress as a risk factor for depression, anxiety, and suicide outside [5] and inside college campuses.

Financial distress being a risk factor for poor mental health of college students is relevant to our understanding of the harmful effect of stress for college students. Transition to college is known to be stressful for many students, which needs effective adjustment [2]. Financial distress is not the only type of stress on campus as other students may feel stress due to academic pressure [3], separation from family/friends, emotional and intimate relations, individual responsibility, and employment-related stress [4]. These stressors increase college students' likelihood of mental health disorders [1]. Being a ubiquitous nature of stress in the lives of college students, there is a need to identify various sources of

stress that may contribute to poor mental health risk of college students [1,5].

Prevention of anxiety, depression, and suicide on college campuses are important for several reasons. First, college students do not have enough resources to provide clinical services for the individuals with need. In addition, most college students with serious mental health needs do not seek professional help on campus [46,47]. As a result, there is a need to screen college

students who will be at high risk for multiple mental disorders. To do so, it is crucial to develop screening protocols and programs that can detect high-risk individuals with multiple particular risk factors. Such strategies may contribute to preventing mental health issues for college students before they occur. To screen effectively, we need information regarding correlates of multiple risk outcomes [48].

Table 1. Descriptive characteristics in the participants.

	%	SE	95%CI	
Gender				
Male	34.75	0.02	31.72	37.90
Female	65.25	0.02	62.10	68.28
First Generation Student				
No	66.14	0.03	59.66	72.06
Yes	33.86	0.03	27.94	40.34
Transfer				
No	77.79	0.03	71.12	83.28
Yes	22.21	0.03	16.72	28.88
Race and Ethnicity				
Whites				
No	24.92	0.02	20.84	29.51
Yes	75.08	0.02	70.49	79.16
Blacks				
No	90.23	0.01	87.34	92.52
Yes	9.77	0.01	7.48	12.66
American Indians and Native Americans				
No	97.88	0.00	97.19	98.40
Yes	2.12	0.00	1.60	2.81
Asians				
No	89.48	0.01	86.20	92.06
Yes	10.52	0.01	7.94	13.80
Pacific Islanders				
No	98.72	0.00	97.90	99.22
Yes	1.28	0.00	0.78	2.10
Hispanics				
No	87.56	0.02	84.20	90.29
Yes	12.44	0.02	9.71	15.80
	Mean	SE	95%CI	
Age (Years)	20.72	0.26	20.20	21.24
Financial Distress	2.34	0.08	2.18	2.51
Duration Being in the Program (Years)	2.56	0.14	2.28	2.83
Symptoms of Anxiety	8.49	0.57	7.35	9.64
Symptoms of Depression	9.81	0.50	8.80	10.81
Suicidal Behaviors	0.30	0.03	0.24	0.36
Social Isolation	9.08	0.34	8.39	9.77

Table 2. Summary of logistic regression on the association between financial distress and anxiety.

	B	SE	95% CI		z	P
Age	-0.18	0.04	-0.27	-0.10	-4.35	0.000
Gender (Females)	1.64	0.52	0.58	2.69	3.12	0.003
Financial distress	1.86	0.30	1.26	2.46	6.20	0.000
First generation students	0.06	0.25	-0.45	0.57	0.25	0.802
Years in the program	0.07	0.20	-0.32	0.46	0.36	0.721
Transfer student	1.45	0.45	0.55	2.36	3.22	0.002
Race (Whites)	3.48	1.39	0.69	6.27	2.50	0.016
Race (Blacks)	1.10	2.00	-2.91	5.10	0.55	0.584
Race (American Indians and Native Americans)	1.52	2.04	-2.57	5.61	0.75	0.459
Race (Asians)	0.52	0.83	-1.15	2.19	0.62	0.536
Ethnicity (Hispanics)	0.04	0.56	-1.09	1.17	0.08	0.940
Race (Pacific Islanders)	-0.04	0.97	-1.99	1.90	-0.05	0.963
Social Isolation	0.24	0.07	0.09	0.39	3.29	0.002

Intercept	1.32	2.37	-3.43	6.07	0.56	0.580
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Table 3. Summary of logistic regressions on the associations between financial distress and depression.

	B	SE	95% CI	z	p	
Age	-0.16	0.09	-0.33	0.02	-1.80	0.078
Gender (Females)	1.16	0.88	-0.60	2.92	1.32	0.192
Financial distress	2.23	0.28	1.67	2.80	7.93	0.000
First generation students	-0.31	0.29	-0.90	0.28	-1.06	0.292
Years in the program	-0.29	0.30	-0.89	0.32	-0.95	0.345
Transfer student	-0.40	1.22	-2.85	2.06	-0.32	0.748
Race (Whites)	0.73	0.95	-1.18	2.63	0.77	0.447
Race (Blacks)	-0.03	1.68	-3.41	3.35	-0.02	0.985
Race (American Indians and Native Americans)	3.43	3.17	-2.93	9.79	1.08	0.285
Race (Asians)	0.24	1.33	-2.43	2.91	0.18	0.858
Ethnicity (Hispanics)	-0.26	0.92	-2.10	1.59	-0.28	0.781
Race (Pacific Islanders)	-1.37	1.36	-4.10	1.37	-1.00	0.320
Social Isolation	0.53	0.10	0.32	0.73	5.16	0.000
Intercept	2.71	2.47	-2.24	7.66	1.10	0.278

Table 4. Summary of logistic regression on the association between financial distress and suicidal ideation.

	B	SE	95% CI	z	P	
Age	-0.01	0.01	-0.02	0.00	-1.30	0.198
Gender (Females)	0.01	0.13	-0.25	0.28	0.11	0.916
Financial distress	0.14	0.03	0.07	0.20	4.27	0.000
First generation students	-0.05	0.09	-0.22	0.13	-0.56	0.576
Years in the program	-0.05	0.04	-0.12	0.03	-1.14	0.260
Transfer student	0.03	0.11	-0.19	0.25	0.29	0.772
Race (Whites)	-0.01	0.11	-0.24	0.22	-0.10	0.923
Race (Blacks)	-0.01	0.14	-0.29	0.28	-0.04	0.969
Race (American Indians and Native Americans)	-0.18	0.23	-0.65	0.29	-0.76	0.453
Race (Asians)	0.23	0.25	-0.27	0.73	0.91	0.367
Ethnicity (Hispanics)	-0.05	0.11	-0.26	0.17	-0.44	0.661
Race (Pacific Islanders)	-0.32	0.23	-0.79	0.15	-1.35	0.184
Social Isolation	0.04	0.01	0.01	0.07	3.05	0.004
Intercept	-0.13	0.13	-0.39	0.14	-0.96	0.343

Low SES college students (those with financial distress) may have particular needs from mental health promotion programs. Screening of financial distress in low SES college may be a necessary part of prevention of anxiety, depression, and suicide of college students.

The current study had some methodological limitations. First, due to a cross-sectional design, the results should be only interpreted as association rather than causation. Potential biases may have happened due to the response rate (non-response). The measurement bias is also likely in this study, as some college students may underreport suicidal behaviors. This becomes a problem if SES impacts social desirability and the validity of the measures. Future research may use other outcomes such as drug use and binge drinking. The current study measured the effects of financial distress on mental health, however, financial distress also impacts physical health. More is to be learned about the role of financial distress as a risk factor for poor physical health of college students.

This study was only limited to undergraduates who were American. International students and sexual minorities were not included in the current study. More research is needed on social determinants and consequences of social isolation for groups based on a wide range of social identities that marginalize individuals. Research should also test how race and sexual orientation interact on these processes. More research should find the most efficient

programs and interventions that can screen risk of mental health problems in college campuses and the effective strategies that can improve mental health of college students. Research should also determine the role of other SES indicators on mental health problems among college students.

Conclusions

In summary, financial distress is a risk factor for symptoms of anxiety, depression, and suicidality among college students. Low SES college students with financial needs may need special mental health promotion on college campuses. We argue that screening should evaluate perceived financial status as well as mental health risk of college students.

References

1. Pedrelli P, Nyer M, Yeung A, Zulauf C, Wilens T. College students: mental health problems and treatment considerations. *Academic Psychiatry*. 2015;39(5):503-11.
2. Lester D. College student stressors, depression, and suicidal ideation. *Psychological reports*. 2014;114(1):293-6.
3. Misra R, McKean M, West S, Russo T. Academic stress of college students: Comparison of student and faculty perceptions. *College Student Journal*. 2000;34(2).
4. Ross SE, Niebling BC, Heckert TM. Sources of stress among college students. *Social psychology*. 1999;61(5):841-6.
5. Assari S. Multiplicative Effects of Social and Psychological Risk Factors on College Students' Suicidal Behaviors. *Brain Sci*. 2018 ;8(5). pii: E91.

6. Salam A, Mahadevan R, Abdul Rahman A, Abdullah N, Abd Harith AA, Shan CP. Stress among First and Third Year Medical Students at University Kebangsaan Malaysia. *Pak J Med Sci*. 2015;31(1):169-73.
7. Archuleta KL, Dale A, Spann SM. College Students and Financial Distress: Exploring Debt, Financial Satisfaction, and Financial Anxiety. *Journal of Financial Counseling and Planning*. 2013;24(2):50-62.
8. Archer J. Sex differences in aggression between heterosexual partners: a meta-analytic review. *Psychological bulletin*. 2000;126(5):651.
9. Ouellet- Morin I, Fisher HL, York- Smith M, Fincham- Campbell S, Moffitt TE, Arseneault L. Intimate partner violence and new- onset depression: a longitudinal study of women's childhood and adult histories of abuse. *Depression and anxiety*. 2015;32(5):316-24.
10. De Visser RO, Rissel CE, Richters J, Smith AM. The impact of sexual coercion on psychological, physical, and sexual well-being in a representative sample of Australian women. *Archives of sexual behavior*. 2007;36(5):676-86.
11. Jewkes R, Fulu E, Tabassam Naved R, Chirwa E, Dunkle K, Haardörfer R, Garcia-Moreno C. UN Multi-country Study on Men and Violence Study Team. Women's and men's reports of past-year prevalence of intimate partner violence and rape and women's risk factors for intimate partner violence: A multicountry cross-sectional study in Asia and the Pacific. *PLoS Med*. 2017;14:e1002381.
12. Braam AW, Copeland JR, Delespaul PA, Beekman AT, Como A, Dewey M, Fichter M, Holwerda TJ, Lawlor BA, Lobo A, Magnússon H. Depression, subthreshold depression and comorbid anxiety symptoms in older Europeans: results from the EURODEP concerted action. *Journal of affective disorders*. 2014;155:266-72.
13. Almeida OP, Draper B, Pirkis J, Snowdon J, Lautenschlager NT, Byrne G, Sim M, Stocks N, Kerse N, Flicker L, Pfaff JJ. Anxiety, depression, and comorbid anxiety and depression: risk factors and outcome over two years. *International Psychogeriatrics*. 2012;24(10):1622-32.
14. Hek K, Tiemeier H, Newson RS, Luijendijk HJ, Hofman A, Mulder CL. Anxiety disorders and comorbid depression in community dwelling older adults. *International Journal of Methods in Psychiatric Research*. 2011;20(3):157-68.
15. Pfeiffer PN, Ganoczy D, Ilgen M, Zivin K, Valenstein M. Comorbid anxiety as a suicide risk factor among depressed veterans. *Depression and anxiety*. 2009;26(8):752-7.
16. Nyer M, Holt DJ, Pedrelli P, Fava M, Ameral V, Cassiello CF, Nock MK, Ross M, Hutchinson D, Farabaugh A. Factors that distinguish college students with depressive symptoms with and without suicidal thoughts. *Annals of clinical psychiatry: official journal of the American Academy of Clinical Psychiatrists*. 2013;25(1):41.
17. Farabaugh A, Bitran S, Nyer M, Holt DJ, Pedrelli P, Shyu I, Hollon SD, Zisook S, Baer L, Busse W, Petersen TJ. Depression and suicidal ideation in college students. *Psychopathology*. 2012;45(4):228-34.
18. Shtayermman O, Fayda MG, Knight KL. Risk factors for suicidal ideation among college students: 6-month follow-up. *International quarterly of community health education*. 2013;33(1):69-82.
19. Garlow SJ, Rosenberg J, Moore JD, Haas AP, Koestner B, Hendin H, Nemeroff CB. Depression, desperation, and suicidal ideation in college students: results from the American Foundation for Suicide Prevention College Screening Project at Emory University. *Depression and anxiety*. 2008;25(6):482-8.
20. Lamis DA, Ballard ED, May AM, Dvorak RD. Depressive symptoms and suicidal ideation in college students: the mediating and moderating roles of hopelessness, alcohol problems, and social support. *Journal of clinical psychology*. 2016;72(9):919-32.
21. Chesin MS, Jeglic EL. Factors associated with recurrent suicidal ideation among racially and ethnically diverse college students with a history of suicide attempt: The role of mindfulness. *Archives of suicide research*. 2016;20(1):29-44.
22. Bryan CJ, Bryan AO. Sociodemographic correlates of suicidal thoughts and behaviors among college student service members/veterans. *Journal of American college health*. 2015;63(7):502-7.
23. De Luca S, Yan Y, Lytle M, Brownson C. The associations of race/ethnicity and suicidal ideation among college students: A latent class analysis examining precipitating events and disclosure patterns. *Suicide and Life- Threatening Behavior*. 2014;44(4):444-56.
24. Nath Y, Paris J, Thombs B, Kirmayer L. Prevalence and social determinants of suicidal behaviours among college youth in India. *International Journal of Social Psychiatry*. 2012;58(4):393-9.
25. Wilcox HC, Arria AM, Caldeira KM, Vincent KB, Pinchevsky GM, O'Grady KE. Longitudinal predictors of past-year non-suicidal self-injury and motives among college students. *Psychological medicine*. 2012;42(4):717-26.
26. Assari S. Parental Educational Attainment and Mental Well-Being of College Students: Diminished Returns of Blacks. *Brain Sci*. 2018 ;8(11). pii: E193.
27. Shupe MJ, Yager G. Self-Concept, Social Isolation, and Academic Achievement in College Students with and without Disabilities. <https://www.shsu.edu/piic/fall2005/shupe.html>
28. Pipes RB. Social Anxiety and Isolation in College Students: A Comparison of Two Treatments. *J College Student Personnel*. 1982; 23 (6) 502-08.
29. Hefner J, Eisenberg D. Social support and mental health among college students. *Am J Orthopsychiatr*. 2009;79(4):491-9.
30. Ozdemir U, Tuncay T. Correlates of loneliness among university students. *Child Adolesc Psychiatry Ment Health*. 2008;2(1):29. doi: 10.1186/1753-2000-2-29.
31. Assari S, Moghani Lankarani M. Violence Exposure and Mental Health of College Students in the United States. *Behav Sci*. 2018;8(6). pii: E53.
32. Mortier P, Demyttenaere K, Auerbach RP, Cuijpers P, Green JG, Kiekens G, Kessler RC, Nock MK, Zaslavsky AM, Bruffaerts R. First onset of suicidal thoughts and behaviours in college. *Journal of affective disorders*. 2017;207:291-9.
33. Mehr KE, Daltry R. Examining mental health differences between transfer and nontransfer university students seeking counseling services. *Journal of College Student Psychotherapy*. 2016;30(2):146-55.
34. Rodriguez N, Mira CB, Myers HF, Morris JK, Cardoza D. Family or friends: Who plays a greater supportive role for Latino college students?. *Cultural Diversity and Ethnic Minority Psychology*. 2003;9(3):236.
35. Ong AD, Phinney JS, Dennis J. Competence under challenge: Exploring the protective influence of parental support and ethnic identity in Latino college students. *Journal of adolescence*. 2006;29(6):961-79.
36. Wu J, Wu YT, Feng SX, Meng H, Chen H. Mediating effects on depression regarding the relationship between negative life events and suicide ideation among college students. *Zhonghua liu xing bing xue za zhi= Zhonghua liuxingbingxue zazhi*. 2012;33(11):1111-4.
37. Eisenberg D, Golberstein E, Hunt JB. Mental health and academic success in college. *The BE Journal of Economic Analysis & Policy*. 2009;9(1).
38. Zivin K, Eisenberg D, Gollust SE, Golberstein E. Persistence of mental health problems and needs in a college student population. *Journal of affective disorders*. 2009 ;117(3):180-5.
39. Spitzer RL, Kroenke K, Williams JB, Löwe B. A brief measure for assessing generalized anxiety disorder: the GAD-7. *Archives of internal medicine*. 2006 ;166(10):1092-7.
40. Kroenke K, Spitzer RL, Williams JB, Monahan PO, Löwe B. Anxiety disorders in primary care: prevalence, impairment, comorbidity, and detection. *Annals of internal medicine*. 2007;146(5):317-25.
41. Kessler RC, Andrews G, Mroczek D, Ustun B, Wittchen HU. The World Health Organization composite international diagnostic interview short- form (CIDI- SF). *International journal of methods in psychiatric research*. 1998;7(4):171-85.
42. Kessler RC, Berglund PA, Borges G, Castilla-Puentes RC, Glantz MD, Jaeger SA, Merikangas KR, Nock MK, Russo LJ, Stang PE. Smoking and suicidal behaviors in the National Comorbidity Survey: Replication. *J Nerv Ment Dis*. 2007;195(5):369-77.
43. Borges G, Angst J, Nock MK, Ruscio AM, Walters EE, Kessler RC. A risk index for 12-month suicide attempts in the National Comorbidity Survey Replication (NCS-R). *Psychol Med*. 2006;36(12):1747-57.
44. Dueweke AR, Schwartz-Mette RA. Social-cognitive and social-behavioral correlates of suicide risk in college students:

- contributions from interpersonal theories of suicide and depression. *Archives of suicide research*. 2018 ;22(2):224-40.
45. Auerbach RP, Mortier P, Bruffaerts R, Alonso J, Benjet C, Cuijpers P, Demyttenaere K, Ebert DD, Green JG, Hasking P, Murray E, Nock MK, Pinder-Amaker S, Sampson NA, Stein DJ, Vilagut G, Zaslavsky AM, Kessler RC; WHO WMH-ICS Collaborators. WHO World Mental Health Surveys International College Student Project: Prevalence and distribution of mental disorders. *J Abnorm Psychol*. 2018;127(7):623-638.
 46. Nilsson JE, Berkel LA, Flores LY, Lucas MS. Utilization rate and presenting concerns of international students at a university counseling center: Implications for outreach programming. *Journal of College Student Psychotherapy*. 2004;19(2):49-59.
 47. Wong J, Brownson C, Rutkowski L, Nguyen CP, Becker MS. A mediation model of professional psychological help seeking for suicide ideation among Asian American and white American college students. *Archives of suicide research*. 2014;18(3):259-73.
 48. Beidas RS, Stewart RE, Walsh L, Lucas S, Downey MM, Jackson K, Fernandez T, Mandell DS. Free, brief, and validated: Standardized instruments for low-resource mental health settings. *Cogn Behav Pract*. 2015;22(1):5-19.