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Observations of Stress and Health: A Micro Investigation of Perception among University Students

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Abstract This study analyzed how university students perceived their level of stress, as well as their overall health. Using a survey instrument, the majority of students rated their stress level as "average." The primary causes of stress were funding, job security, responsibility, time, and work load. Almost all of the respondents had complaints of illness over the previous six months, however the majority of students did not take time off for those illnesses. Illness related symptoms most commonly reported were headache, sleep disturbance, flu, and allergies. Only a very small percentage had seen a physician during the previous six months and very few noted they were taking prescription medication. Over 90% rated their overall health as either average or good.

Keywords Stress, Health, Students

1. Introduction

Stress can be defined in several ways, but typically includes external stressors, demand from the environment as perceived buy the individual, and physiological responses to a threatening situation [1]. Stress discourse has been predicated on the notion that stress levels can be tied to a variety of health related issues. It has been well established that childhood stress poses a greater risk for depression and anxiety in adulthood [2]. Miller et. al. has also linked childhood stress to vascular disease, autoimmune disorders, and premature mortality. It has been suggested that childhood trauma can leave epigenetic markings, leaving them more prone to inflammatory conditions in the future [3]. Over the last three decades, studies have emerged linking adult stress to cardiac disease [4-7]. DiVincenzo et. al. have demonstrated the first step of endothelia dysfunction as a result of stress that could later lead to vascular disease [6]. Furthermore, stress has been shown to exacerbate autoimmune disorders [8, 9]. Dube et. al. found that childhood stress led to an increase in hospitalizations for autoimmune disease as an adult. It is not always statistically clear however, whether stress caused the health disorder, or the health disorder induced the stress, so only correlation rather than causation can be demonstrated in most cases.

High demand occupations are the focus of many stress and health related studies [10-13]. These typically examine high stress jobs such as doctors, nurses, and correctional officers. Correlations are often found between health related symptoms and stressors such as time spent at work, level of responsibilities, and risk level of job. Phipps notes unmet needs related to recognition by colleagues and a sense of personal competence may lead to diminished job satisfaction and an overall “burn-out” among physicians and nurses [12].

Studies have also examined health related issues and performance or quality of life variables among university students [14-17]. Such studies typically conclude that stress levels are perceived as higher among university students compared with young adults of the same age not attending university. Canadian studies of undergraduate students found that the majority of survey respondents felt their lives were either very stressful or stressful [18, 19]. Studies conducted at a university in Sweden saw similar results [20, 21]. Furthermore, studies have linked stress among young adults with mental illness (students and non-students alike) [22, 23]. Many of these results are not much unlike those of high demand occupations, suggesting that levels of responsibility may be a common denominator between stress and health.

Perceived stress and health among American university students however, is not well understood and very little research exists. Studies focused only on high-risk occupations or youth in general, obfuscates the variegated issues unique to university students. The objective of this study is to understand how stress and health are perceived among students attending a four-year university. This initiatory study could serve as baseline data for the evaluation of health education strategies that can help assist students with stress related coping mechanisms and on-campus health invention programs.

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2. Methods

2.1. Demographics

The sample population for this study consisted of students attending a four-year university in the central valley of California. The majority of students (85%) are full time students. Males comprise 42% of the student body and females comprise 58%. As a Hispanic serving institution, 46% of the student body is Hispanic. Approximately 22% are Caucasian, and 14% are Asian. The average course load for undergraduates is 13.2 units and 15% complete their educational requirements and graduate in 4 years (the majority take 6 years) [23]. Largely considered a commuter campus, many students also work full-time or part-time.

2.2. Ethical Consideration

This study utilized a survey approved by the university Internal Review Board for the Protection of Human Subjects. All participants were 18 years of age or older and currently enrolled as university students. Participants were not required to complete the survey.

2.3. Data Collection

Instructors administered surveys at the end of General Education classes across the campus. General Education classes were chosen in order to acquire answers from a diverse group of students, rather than using courses designed for majors where students may have similar interests and backgrounds. Additionally, student assistants were used to randomly conduct surveys on campus. Completing the survey was optional and there was no incentive offered for participating in the study. The survey was completed by 226 students. Respondents answered questions via dichotomous responses, multiple-choice responses, or a rating scale. Not every student answered every question, so there is slight variability between observed frequencies for each question. The same sample group was used for each question.

The survey consisted of the following questions:

- How would you rate your current stress level? (rating scale)
- What are the main causes of that stress? (multiple choice)
- What type of illness or complaints have you experienced over the last year? (multiple choice)
- Have you taken time off for that illness over the last year? (dichotomous)
- How often have you visited a physician for illness during the past 6 months? (multiple choice)
- How many prescription medications are you currently taking? (multiple choice)
- How would you rate your overall health? (rating scale)

3. Results

Table 1 shows that almost half of the students that completed the survey perceived their stress level as "average." Only 7% of respondents perceived their stress level as very high. Despite stress level being perceived as "average," Table 2 shows there were multiple noted causes. One-quarter of the respondents cited "funding" as their main cause of stress, followed by "family," "time," and "workload."

At 63%, "headache" was ranked as the most perceived type of illness, as shown in Table 3. This was followed by "muscle tension" and "fatigue." The majority of students did not take time off due to their illness (See Table 4).

Approximately half of the students did not visit a physician during the past 6 months. Thirty percent of students visited a physical once and almost all of the remaining students visited a physician between 2-4 times. Only 1.5% of respondents visited a physician more than 2-4 times (See Table 5). Likewise, the majority of students did not take any prescription medications. Twenty-three percent of students took one medication. Less than 10% of students took two or more medications (See Table 6).

As shown in Table 7, the majority of students rated their overall health as "good." Almost half rated their health as "excellent" or "average." Less than 5% rated their health as "below average" or "bad."

Table 1. Perceived Stress Level

Observed Frequencies (n=211)		
	Yes	**No**
Very High	15 (7%)	196
High	60 (28%)	151
Average	102 (48%)	109
Mild	30 (14%)	181
No Stress	4 (2%)	207

Table 2. Main Causes of Stress

Observed Frequencies (n=221)		
	Yes	**No**
Family	47 (22%)	164
Funding	53 (25%)	158
Job Security	32 (15%)	179
Lack of Direction	25 (12%)	186
Responsibility	29 (14%)	182
Social Problems	29 (14%)	182
Time	49 (23%)	162
Work Load	42 (20%)	169
Other	30 (14%)	181

Table 3. Types of Illness (over the last year)

Observed Frequencies (n=193)		
	Yes	**No**
Headache	121 (63%)	72
Muscle Tension	80 (41%)	113
Irritability	65 (34%)	128
Sleep Disturbance	71 (37%)	122
Depression	40 (21%)	153
Fatigue	79 (41%)	114
Stomach/Bowel Trouble	27 (14%)	166
Flu	37 (19%)	156
Allergies	63 (33%)	130
Memory Loss	13 (7%)	180
Blood Pressure	16 (8%)	177

Table 4. Time Off

Observed Frequencies (n=222)		
	Yes	**No**
Took Time Off	65 (29%)	157
Did Not Take Time Off	157 (71%)	65

Table 5. Frequency of Physician Visits

Observed Frequencies (n=220)		
	Yes	**No**
Once	67 (30%)	153
2-4 Times	29 (13%)	191
5-7 Times	0 (0%)	220
8-9 Times	1 (.5%)	219
>10 Times	3 (1%)	217
No Visit	120 (55%)	100

Table 6. Prescription Medications

Observed Frequencies (n=223)		
	Yes	**No**
0	153 (67%)	70
1	51 (23%)	172
2-3	13 (6%)	210
4-5	4 (3%)	219
6-7	2 (.9%)	221
>7	0 (0%)	223

Table 7. Perceived Overall Health

Observed Frequencies (n=226)		
	Yes	**No**
Excellent	53 (23%)	173
Good	119 (53%)	107
Average	43 (19%)	183
Below Average	10 (4%)	216
Bad	1 (.4%)	225

4. Discussion

In summation, the majority of students rated their stress as "average." The primary causes of stress were funding, family, job security, responsibility, time, and work load. Almost of the respondents had complaints of illness. Common illness related symptoms were headache, muscle tension, irritability, sleep disturbances, fatigue, and allergies. The majority of students had not seen a physician and were not taking prescription medications. The majority of students rated their overall health as excellent, good, or average.

Interestingly, stress levels were not as high as expected. It was expected that students would rate their perceived stress as "very high" or "high" considering most students work full-time or part-time in addition to attending university. Perceived high stress levels also were more commonly noted in literature. Perhaps the "average" rating is correlated to the average unit load of 13 units. Additionally, "stress" may have a negative connotation that students did not want to easily admit and/or it was not adequately defined. It was expected however, that "funding" would rate highly as a stressor. Although this particular university is a subsidized state school with relatively low tuition, the central valley of California is stricken with some of highest unemployment and poverty rates in the nation.

It was not remarkable that "headache" ranked very highly among students as an experienced illness. It was also predicted that muscle tension and fatigue would rank highly. It was noteworthy however, that "allergies" did not rank higher as the area of the country in which the survey took place has particularly high pollution levels and relatively high allergy and asthma rates.

The majority of students did not take off due to their illness. It was not clear however, whether this was referring to their academic responsibilities or other responsibilities. It was not unforeseen that approximately half of the students did not visit a physician during the past 6 months. Many students do not have access to affordable health care and unfortunately many do not utilize the campus health center. A very small percentage had seen a physician frequently, which most likely involved a chronic condition. This correlated with the number of medications taken, as the majority of students were not taking any medications.

Almost all the students rated their overall health between

"excellent" and "average" with the majority of students choosing "good." Given the age range of the students, this was an anticipated response.

5. Future Research

For all intents and purposes, this study served as an exploratory study. As such, much was learned on how to improve the study, beginning with the survey instrument. Given the complexity of student responsibilities, certain variables could be better defined. "Time taken off" for example, did not specify whether it was in reference to school, work, family responsibilities, etc. Secondly, now that a baseline has been established, a larger sample group should be used. This will lessen the impact of varying observed frequencies between survey questions.

Future research with a larger sample group would be required to provide meaningful correlations between variables and provide insight into statistically significant links. Demographics could also be analyzed to determine if correlations differ depending upon characteristics such as income, ethnicity, or marital status. Given the propensity of university students to develop mental health impairments such as anxiety, as a result of stress, it may also be interesting to incorporate questions regarding mental health issues in a future survey.

An identical survey could be then be administered to other campuses within the state university system, as well as other universities throughout the country, to see if similarities exist between the type of university (state, private, etc.). Finally, results could be compared to other groups typically used in stress and health studies such as nurses, doctors, and first responders.

These results could be extremely useful for campus counselors and campus programs to improve discourse with students struggling with stress and stress related issues and legitimate the need for campus health related programs.

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REFERENCES

[1] Rice PL. Stress and health. Pacific Grove, CA: Brooks/Cole Publishing; 1999.

[2] Heim C, Binder EB. Current research trends in early life stress and depression: Review of human studies on sensitive periods, gene–environment interactions, and epigenetics. Experimental neurology. 2012 Jan 31; 233(1):102-11.

[3] Miller GE, Chen E, Parker KJ. Psychological stress in childhood and susceptibility to the chronic diseases of aging: moving toward a model of behavioral and biological mechanisms. Psychological bulletin. 2011 Nov; 137(6):959.

[4] Aromaa A, Raitasalo R, Reunanen A, Impivaara O, Heliovaara M, Knekt P, Lehtinet V, Joukamaa M, Maatela J. Depression and cardiovascular diseases. Acta Psychiatrica Scandinavica. 1994 Feb 1; 89(s377):77-82.

[5] Demirtaş T, Utkan T, Karson A, Yazır Y, Bayramgürler D, Gacar N. The link between unpredictable chronic mild stress model for depression and vascular inflammation?. Inflammation. 2014 Oct 1; 37(5):1432-8.

[6] DiVincenzo L, Reber M, Perera V, Chilian WM. Connecting the dots—Establishing causality between chronic stress, depression, and cardiovascular disease. Journal of Applied Physiology. 2014 Nov 1; 117(9):957-8.

[7] Alexopoulos GS, Bruce ML, Silbersweig D, Kalayam B, Stern E. Vascular depression: a new view of late-onset depression. Dialogues Clin Neurosci. 1999 Sep;1(2):68-80.

[8] Dube SR, Fairweather D, Pearson WS, Felitti VJ, Anda RF, Croft JB. Cumulative childhood stress and autoimmune diseases in adults. Psychosomatic medicine. 2009 Feb; 71(2): 243.

[9] Harbuz MS, Richards LJ, CHOVER‐GONZALEZ AJ, MARTI‐SISTAC O, Jessop DS. Stress in autoimmune disease models. Annals of the New York Academy of Sciences. 2006 Jun 1; 1069(1):51-61.

[10] Symons L, Persaud R. Stress among doctors. BMJ: British Medical Journal. 1995 Mar 18; 310(6981):742.

[11] Khuwaja AK, Qureshi R, Andrades M, Fatmi Z, Khuwaja NK. Comparison of job satisfaction and stress among male and female doctors in teaching hospitals of Karachi. Journal of Ayub Medical College, Abbottabad: JAMC. 2003 Dec; 16(1): 23-7.

[12] Phipps L. Stress among doctors and nurses in the emergency department of a general hospital. CMAJ: Canadian Medical Association Journal. 1988 Sep 1; 139(5): 375.

[13] Gunasingam N, Burns K, Edwards J, Dinh M, Walton M. Reducing stress and burnout in junior doctors: the impact of debriefing sessions. Postgraduate medical journal. 2015 Apr 1; 91(1074): 182-7.

[14] Finney C, Stergiopoulos E, Hensel J, Bonato S, Dewa CS. Organizational stressors associated with job stress and burnout in correctional officers: a systematic review. BMC Public Health. 2013 Jan 29; 13(1):1.

[15] Trockel MT, Barnes MD, Egget DL. Health-related variables and academic performance among first-year college students: implications for sleep and other behaviors. Journal of American College Health. 2000 Nov 1; 49(3):125-31.

[16] Vaez M, Kristenson M, Laflamme L. Perceived quality of life and self-rated health among first-year university students. Social Indicators Research. 2004 Sep 1; 68(2): 221-34.

[17] Stewart-Brown S, Evans J, Patterson J, Petersen S, Doll H, Balding J, Regis D. The health of students in institutes of higher education: an important and neglected public health problem?. Journal of Public Health. 2000 Dec 1; 22(4):492-9.

[18] Pilcher JJ. Affective and daily event predictors of life satisfaction in college students. Social Indicators Research.

1998 Mar 1; 43(3):291-306.

[19] Campbell RL, Svenson LW, Jarvis GK. Perceived level of stress among university undergraduate students in Edmonton, Canada. Perceptual and Motor skills. 1992 Oct 1; 75(2): 552-4.

[20] Svenson LW, Campbell RL. Perceived health status and desired health information needs of university students. Canadian journal of public health= Revue canadienne de sante publique. 1991 Dec; 83(2):167-8.

[21] Vaez M, Laflamme L. First-year university students' health status and socio-demographic determinants of their self-rated health. Work. 2002 Jan 1; 19(1):71-80.

[22] Vaez M, Laflamme L. Health behaviors, self-rated health, and quality of life: A study among first-year Swedish university students. Journal of American College Health. 2003 Jan 1; 51(4): 156-62.

[23] Dalgard OS, Tambs K. Social support, negative life events and mental health. The British Journal of Psychiatry. 1995 Jan 1; 166(1):29-34.

[24] Heiligenstein E, Guenther G, Hsu K, Herman K. Depression and academic impairment in college students. Journal of American College Health. 1996 Sep 1; 45(2):59-64.

[25] Bovier PA, Chamot E, Perneger TV. Perceived stress, internal resources, and social support as determinants of mental health among young adults. Quality of Life Research. 2004 Feb 1; 13(1): 161-70.

[26] Office of Institutional Effectiveness. Enrollment and Demographics [Internet]. Fresno State University. 2015 [cited 19 July 2016]. Available from: http://www.fresnostate.edu/academics/oie/data/enrollment.html.