

Depression, Anxiety, Stress and Wellbeing of Young Psychology Students in Pakistan: A Cross-Sectional Descriptive Study

Dr. Sabahat Haqqani^{1*}, Muhammad Naeem¹, Taqdees Fatima¹, Noor Ul Sabahat¹, Dr. Ishrat Yousaf¹

Abstract

Young university students are increasingly experiencing depression anxiety and low wellbeing particularly in LMICs like Pakistan. This is especially alarming among psychology students as it compromises their ability to provide relief to persons with mental health concerns. This study explored depression, anxiety, stress and wellbeing among 321 Pakistani psychology students. Urdu translated DASS-21 and BBC Wellbeing scale were used to collect data through convenient sampling. Ninety percent of the sample was females. Results indicated high rates of depression (51.6%), anxiety (62%) and stress (41.4%). Low overall, psychological, physical and relationship wellbeing was reported by 52%, 51.6%, 58.6% and 50.6% students, respectively. Comorbidity of depression and anxiety was 46.1%. This study provided a baseline for rates of mental health concerns among psychology students. These results illustrate the enormity of mental health problems among Pakistani psychology students and are calling for immediate intervention and preventive measures.

Introduction:

Prevalence of mental health disorders is increasing among university students (Asif et al., 2020). The frequency of mental health concerns varied from 20.3% to 45% over the period of 12 months (Blanco et al., 2018; Auerbach et al., 2016). Among mental health concerns of young university students, anxiety has been recorded to be 44.25% (15.8% min – 82.6% max) and depression 38.4% (2.1% min – 88.8% max) (Agyapong-Opoku et al., 2023).

Mental health of youth is a big challenge due to many social, economic and health conditions. This challenge is compounded by the swiftly changing world where fast-paced electronic media, globalization, urbanization, migration trends, economic revolutions, pandemics and many other factors are transforming the meaning of being a young person (Fatusi & Hindin, 2010). While these changes are global, they have affected youth of developing countries more adversely than those in the developed regions due to more drastic socioeconomic conditions in low to middle income countries (LMICs) (Lux et al., 2023).

Pakistan is one such LMIC where youth is facing multitude of mental health challenges in addition to normative transition from adolescence to adulthood. Approximately 36 million 20 to 24 years old young people live in Pakistan (20% of the total population) (Federal Bureau of statistics, Government of Pakistan, 2010; Islamabad Policy Research Institute, 2018). In a study conducted on Pakistani university students, depression, anxiety and stress were found to be 75%, 88.4% and 84.4% respectively (Asif et al., 2020). Such debilitating high rates of depression and anxiety are a cause of concern

¹Capital University of Science and Technology, Pakistan

*Corresponding Author

as they adversely affect wellbeing and performance of youth (Cheng & McCarthy, 2018). Since young people/ students are the most valuable human resource of a country, compromising the quality of life of students has a wide ranging economic and social impact (Pan et al., 2024).

According to World Economic Forum (2024) the cost of mental health issues was approximately 2.5 trillion USD until 2010 and is estimated to increase to 6 trillion by 2030. Around 58% of this projected burden will be carried by LMICs and around 66% of these costs are indirect costs. Although investment in mental health may seem like a costly business, the return estimates indicate that gains are also high. For instance, a study conducted on 36 LMICs reports that 80% of global burden of mental disorders is contributed by depression. The estimated net present value of investment on depression treatment was 91 billion USD; and 50 billion USD for anxiety treatment (141 billion USD in total). When these high costs are compared to the economic return, a return of worth more than 399 billion USD was found. Hence, the benefit to cost ratio (that can be achieved by focusing on economic productivity return) are 2.3-3:1 and 3.3-5.6:1 after including social returns as well (Whiteford, et al., 2013). Hence, investment on mental health will provide a strong economic and social return in terms of restored production as well as enhanced wellbeing for LMICs like Pakistan. However, this must be preceded by the awareness of the extent of mental health concerns experience by youth.

As stated earlier, there is mounting evidence of high frequency of stress, depression and anxiety experienced by Pakistani youth. In this age group, youth are looking at future prospects and working towards their professional and educational attainments. For a variety of reasons, this age group is exposed to various stressors such as growing insecurity, economic problems, disruption in social fabric, and demographic transition in this segment of the population (Khan et al., 2007). In addition to these stressors, young people enrolled in universities also experience evolving responsibilities, pressure for time management, changed eating and sleeping patterns as well as struggle with self-care (Ofstedal et al., 2023; Di Benedetto et al., 2019). Thus, they become more prone to suffering from high levels of stress, depression and anxiety and have become a highly vulnerable population group.

Students enrolled in various programs in universities experience stress, anxiety depression and reduced wellbeing. For instance, among 19 to 22 years old Pakistani medical students 45.5% experienced depression and anxiety (Hashmi et. al., 2014). Another study reported 31%, 41.9% and 12.5% depression, anxiety and stress among students of dental and medical college, respectively (Naz et al., 2017). Results with higher prevalence can be seen in other studies conducted on university students enrolled in various programs (Khan et al., 2023). Though study of psychology is typically thought of as a path to finding solutions of mental health issues, students of psychology are as vulnerable to mental health issues as any other student (Kaur, 2023; Palos et al., 2019; Swords & Ellis, 2017; Jamil & Baseer, 2023).

Stress, depression and anxiety are harmful for community and an individual but when experienced by a psychologist in training, its harmful impact is increased by manifolds. Research has shown that experiencing mental distress reduces the professional competencies of the psychologists such as empathy and ability to provide emotional support (Vivolo et al., 2024; Barse et al., 2013; O'Connor et al., 2018). Thus deteriorating the quality of service further in an already struggling mental health care system of Pakistan. Keeping this in view, this study has explored the level of wellbeing, depression, anxiety and stress among psychology students in Pakistan

Materials and Methods

Participants and procedures

A cross sectional research design was used to investigate depression, anxiety, stress and well-being among Pakistani young adults enrolled in Psychology program. Convenient sampling technique was used to collect data from 323 participants at a university campus, Islamabad.

Measures

The data collection protocol consisted of demographic information sheet (gender, program level and semester) and two self-administered standardized psychological assessment scales in Urdu language; Depression, Anxiety, and Stress Scale (DASS-21) and BBC Wellbeing Scale.

Depression, Anxiety and Stress Scale (DASS-21) (Lovibond & Lovibond, 1995)

DASS-21 is a shorter version of DASS-42. Urdu translation by Haqqani (2009) is used in this study. It consists of 21 items scored on 4-point Likert scale ranging from 0 (did not apply to me at all) to 4 (apply to me very much or most of the time). DASS-21 is composed of 3 subscales for depression, anxiety and stress. Each subscale consists of 7 items. Scores are calculated for each subscale by adding all the items of each subscale and then multiplying by two. Higher scores indicate more depression, anxiety and stress. Each subscale of DASS-21 has cut off scores for mild, moderate, severe and extremely severe levels of depression, anxiety and stress. It has high internal consistency, with Cronbach's alpha for depression .81, anxiety .73 and stress .81 (DiGiacomo et. Al., 2007). In the present study, Cronbach's alpha for depression was .79, anxiety .78 and stress .77.

BBC Wellbeing Scale (Kinderman et al., 2011)

This scale measures subjective experiences of wellbeing based on various factors contributing to their overall wellbeing. It is a self-report questionnaire consisting of 24 items. BBC wellbeing scale is composed of three subscales; psychological wellbeing (item # 4 (reversed score), 5,6,7,8,9,10,11,12,13,14,15), physical health and wellbeing (item # 1,2,3,21,22,23,24) and relationships wellbeing (item # 16, 17, 18, 19, 20). An Urdu version consisting of 23 items was used in this study (Khalid, 2014). The translators due to cultural inappropriateness of the item excluded item 19. Internal consistency ($\alpha=.935$) of the total scores on the scale is good (Kinderman et al., 2011). In the present study, Cronbach alpha for overall wellbeing was .88, psychological wellbeing .75, physical wellbeing and .76 relationship wellbeing.

Statistical Analyses

Software Package for Social Sciences (SPSS-29) was used to analyse the data. The data was entered, cleaned and missing values were coded as 99. Cases with missing values were excluded from the analyses. Subsequently, descriptive and inferential statistics were performed. In descriptive statistics, distribution of data was calculated through frequencies, percentages, mean, median, standard deviation, skewness and kurtosis. Reliability of the scales and subscales was measured using Cronbach's Alpha coefficient (α).

Ethics Approval

Ethical approval for this study was taken from Institutional Ethical Review Board (IRB) of Capital University of Science and Technology, Islamabad (Ref: CUST\ORIC\IERB\2023\03). Information sheet was provided to the participants in which confidentiality of the data was ensured. Written informed consent was obtained.

Results

Three hundred and twenty three psychology students were approached for data collection through convenience sampling and 321 completed questionnaires were received. Two questionnaires were returned empty and were not included in the analyses. In this sample, 290 BS and 31 MS psychology students were included. Most of the participants were females (90%). Table 1 shows gender distribution and number of students enrolled in various semesters of the BS and MS psychology programs.

Table 1 Frequency (f) and Percentages (%) of Gender and Semesters of BS and MS Psychology Students (N=321).

Variables and categories	f (%)
Gender	

BS Psychology	Females	289 (90%)
	Males	32 (10%)
MS Psychology	Semester 1	34 (10.6)
	Semester 2	24 (7.5)
	Semester 3	51 (15.9)
	Semester 4	3 (.9)
	Semester 5	71 (22.1)
	Semester 6	46 (14.3)
	Semester 7	37 (11.5)
	Semester 8	24 (7.5)
MS Psychology	Semester 1	20 (6.2)
	Semester 2	11 (3.4)

Table 2 presents descriptive statistics (mean, median, standard deviation), distributional properties (Skewness and Kurtosis) for subscales of depression, anxiety, stress, and overall, psychological, physical and relationship wellbeing. These statistics indicate that data was fairly normally distributed as value of mean, median and mode are very close to one another and skewness and kurtosis values are between -1 to +1.

Table 2 Descriptive Statistics of Depression, Anxiety Stress Scale and BBC Wellbeing Scale (N=321).

Variable	Ite ms	M	Mdn	Mod e	SD	Mi n	Ma x	Skewnes s	Kurtosis
DASS-Dep	7	11.5	10	4	8.78	0	38	.92	.21
DASS-Anx	7	11.5	10	4	8.88	0	42	.89	.36
DASS-Stress	7	14.5	14	10	8.76	0	40	.56	-.21
BBC- Total ^A	23	61	61	55	12.4	4	93	-.26	.27
BBC-Psy ^A	12	32	33	35	5.99	15	53	-.12	.27
BBC-Phy ^A	6	13	13	13	3.45	5	20	-.03	.27
BBC- Relat ^A	5	14	15	12	3.99	4	24	.24	.27

Note: A= 2 missing values; M= Mean, Mdn = Median, SD= Standard Deviation, Min Minimum score, Max = Maximum score, DASS= Depression Anxiety and Stress Scale BBC= BBC Wellbeing Scale; Dep= Depression, Anx= Anxiety, Psy= Psychological wellbeing, Phy = Physical health and wellbeing
Relat= Relationship

The classification of depression, anxiety and stress into mild, moderate, severe and extremely severe is presented in the Table 3 along with categorization of overall, psychological, physical and relationship wellbeing into low and high wellbeing. For classification of DASS-21 subscale cut off values given by the authors of the scale were used and are indicated in table 3. For BBC wellbeing scale cut off were decided based on median scores for overall wellbeing and each subscale.

Table 3 Frequencies (f) and Percentages (%) of Depression anxiety and stress (N=321).

Variables/ Categories	f (%)
DASS-21 Depression ^A	
Normal (0-9)	155 (48.4)
Mild (10-13)	57 (17.8)

	Moderate (14-20)	57 (17.8)
	Severe (21-27)	29 (9.1)
	Extremely severe (28+)	22 (6.9)
DASS-21 Anxiety		
	Normal (0-7)	122 (38)
	Mild (8-9)	26 (8.1)
	Moderate (10-14)	71 (22.1)
	Severe (15-19)	40 (12.5)
	Extremely Severe (20+)	62 (19.3)
DASS-21 Stress		
	Normal (0-14)	188 (58.6)
	Mild (15-18)	44 (13.7)
	Moderate (19-25)	43 (13.4)
	Severe (26-33)	37 (11.5)
	Extremely severe (34+)	9 (2.8)
BBC- Overall Wellbeing ^B		
	Low (≤ 61)	166 (52)
	High (≥ 62)	153 (48)
BBC-Psychological Wellbeing ^C		
	Low (≤ 33)	164 (51.6)
	High (≥ 34)	154 (48.4)
BBC-Physical Health and Wellbeing ^B		
	Low (≤ 15)	187 (58.6)
	High (≥ 16)	132 (41.4)
BBC-Relationship wellbeing ^C		
	Low (≤ 13)	161 (50.6)
	High (>13)	157 (49.4)
Note: Missing values A=1; B=2; C=3, DASS-21= Depression Anxiety and Stress Scale, BBC= BCC Wellbeing Scale and its subscales; BBC cutoff value of median scores is used		

Table 3 shows that approximately half of the sample reported mild to extremely severe depression (51.6%), anxiety (62%) and stress (41.4%). Anxiety is most prevalent followed by depression and stress among psychology students. Out of those who reported experiencing symptoms of depression, anxiety and stress, 30% reported severe to extremely severe depression. Around 23% reported having severe to extremely severe anxiety and 34.5% reported severe to extremely severe stress. Scores on BBC scale reflected a complementary picture where almost half of the sample reported low overall, psychological, physical and relationship wellbeing. More respondents reported low physical health and wellbeing (58%) as compared to other wellbeing subscales. In this sample, 46.1

The proportion of the participants identified as depression and/ or anxiety cases was high. There were 216 cases out of 321, which is 67.28%. Comorbidity of depression and anxiety was reported by 46.1% respondents. Among 289 females, depression, anxiety and stress was reported by 51.4% (N=48), 63.3% (N=183) and 42.9% (N=124), respectively. Comorbidity of depression and anxiety was 46.71% (135/289). Although number of males is very low (10%) in this sample, analyses of depression, anxiety and stress among males indicated similar trends that is 53.1% (N=17/32), 50% (N=16/32), and 28.1% (N=9/32) depression, anxiety and stress, respectively. Comorbidity of depression and anxiety was 40% (13/32) among males.

Discussion

The present study explored frequency of depression, anxiety, stress and wellbeing among students enrolled in BS and MS psychology programs. Severity of depression, anxiety and stress was also calculated. In this study, 90% of the students were female. This can be attributed to the fact that the study of psychology is considered a female dominated field globally (Olos & Hoff, 2006). In almost all universities, there are far more females enrolled in psychology than males in Pakistan. Another reason for low male enrolment in psychology could be the wide spread perception that job perspectives are grim for psychology graduates in Pakistan and culturally males are considered breadwinners of the family (Adil et al, 2017).

The prevalence rates of depression (51.6%), anxiety (62%) and stress (41.4%) among psychology students are alarming. These findings are higher but comparable to rates reported by other studies conducted in Pakistan and other countries (Hashmi et. al., 2014; Naz et al., 2017; Blanco et al., 2018; Auerbach et al., 2016; Agyapong-Opoku et al., 2023). As stated in the introduction while these high rates can be partly attributed to pressures exerted by the fast-paced changes of the modern world (Fatusi & Hindin, 2010), they raise an alarm for mental health pandemic approaching fast. Considering the already staggering mental health care system of Pakistan and mental health of the psychology students, the condition of mental health care seems to be getting worse over time. A psychologist with compromised mental health will not be able to provide quality service in terms of empathy and emotional support (Vivolo et al., 2024; Bearnse et al., 2013; O'Connor et al., 2018). This is also resulting in considerable economic burden in terms of health care and years lost due to disability.

There were more students reporting anxiety than depression and stress. This could be a depiction of anxiety experienced due to the predominant stressful academic environment of the universities that require students to take greater responsibilities, and manage time effectively under pressure. Students also struggle with changed eating and sleeping patterns due to continuous assessment practices. They struggle with self-care (Ofstedal et al., 2023; Di Benedetto et al., 2019). Since the introduction of modern media, students are also struggling with managing their cognitive load (Pittman & Haley, 2023).

Research has indicated that cognitive overload is linked with increased anxiety (Cezar & Macada, 2023). Thus, interventions must be aimed at teaching psychology students to manage their cognitive load and regulate emotions in an effective manner in stressful situations.

The overall wellbeing and psychological wellbeing scores were supplementing the depression anxiety and stress scores. It was interesting to note that 41.4% and 49.4% students reported to be struggling with physical health and relationship wellbeing. According to research, relationships are strongly correlated with depression, anxiety and suicidal ideation (Zheng et al. 2023). Therefore, a dysfunction in this domain as well as depression, anxiety and/ or stress must be taken seriously and addressed through various interventions. From an alternative point of view good interpersonal relations act as protective factor. Thus identification of problem in this domain can provide a starting point for interventions aimed at improving mental health of students.

This study provided a baseline for rates of mental health concerns of psychology students. However, its results must be interpreted with caution as convenient sampling was employed and only depression, anxiety and stress were measured. Scores showing low wellbeing can also be indicative of presence of other mental health concerns and hence a comprehensive survey of all the mental concerns can be done in the future studies. Nevertheless, the result of approximately half of the psychology students suffering from symptoms of depression, anxiety and stress is calling for immediate intervention and preventive measures. In order to create a better academic journey, healthy future prospects in the field of mental health and to improve mental health care system with resilient psychologists, mental health of psychology students must be focused during their training and academic journey.

Declaration: We confirm that the manuscript has been read and approved by all the authors. The requirements for authorship as stated earlier in this document have been met, and that each author believes that the manuscript represents honest work.

Authors' contribution **SH:** Conceptualization; data curation; formal analysis; investigation; methodology; writing – original draft; writing – review and editing. **MN:** Conceptualization; data curation; project administration; resources, data collection. **TF:** Conceptualization; data curation; formal analysis; investigation; writing – review and editing. **NS:** Conceptualization; data curation methodology; data collection, writing – original draft; writing – review and editing **IY:** project administration; resources, data collection.

Ethical policy and institutional review board statement: The study was approved ethically by the Institutional Ethical Review Board at Capital University of Science and Technology (reference no CUST/ORIC/IERC 2023-03).

Declaration of patient consent: The authors certify that they have obtained all appropriate consent forms. In the form the participant(s) have given his/her/their consent for his/her/their information to be reported in the journal. The participants understand that their names and initials will not be published, and due efforts will be made to conceal their identity.

Financial support and sponsorship: The project was funded by the Higher Education Commission of Pakistan.

Conflicts of interest: There are no conflicts of interest to be declared.

Data availability statement: Data are available with the corresponding author (Haqqani. S., e-mail: sabahat.haqqani@cust.edu.pk) and can be presented on request.

References:

- Adil F., Shahed S., Arshad H., (2017). The Burden of Being a Man in a Patriarchal Society *Journal of Arts and Social Sciences*. 4 (2), 57-70.
- Asif, S. M., Mudassar, A., Shahzad, T. Z., Raouf, M., & Pervaiz, T. (2020). Frequency of depression, anxiety and stress among university students. *Pakistan Journal of Medical Sciences*, 36(5). <https://doi.org/10.12669/pjms.36.5.1873>
- Auerbach, R. P., Mortier, P., Bruffaerts, R., Alonso, J., Benjet, C., Cuijpers, P., Demyttenaere, K., Ebert, D. D., Green, J., Hasking, P., Murray, E., Nock, M. K., Pinder-Amaker, S., Sampson, N. A., Stein, D. J., Vilagut, G., Zaslavsky, A. M., & Kessler, R. C. (2018). WHO World Mental Health Surveys International College Student Project: Prevalence and distribution of mental disorders. *Journal of Abnormal Psychology*, 127(7), 623–638. <https://doi.org/10.1037/abn0000362>
- Agyapong-Opoku, G., Agyapong, B., Obuobi-Donkor, G., & Eboeime, E. (2023). Depression and Anxiety among Undergraduate Health Science Students: A Scoping Review of the Literature. *Behavioral Sciences*, 13(12), 1002. <https://doi.org/10.3390/bs13121002>
- Bearse, J. L., McMinn, M. R., Seegobin, W., & Free, K. (2013). Barriers to psychologists seeking mental health care. *Professional Psychology, Research and Practice*, 44(3), 150–157. <https://doi.org/10.1037/a0031182>
- Blanco, C. , Okuda, M. , Wright, C. , Hasin, D. S. , Grant, B. F. , Liu, S.-M. , & Olfson, M. (2008). Mental health of college students and their non-college-attending peers. *Archives of General Psychiatry*, 65(12), 1429–1437. [10.1001/archpsyc.65.12.1429](https://doi.org/10.1001/archpsyc.65.12.1429)
- Cezar, B. G. S., & Maçada, A. C. G. (2023). Cognitive Overload, Anxiety, Cognitive Fatigue, Avoidance Behavior and Data Literacy in Big Data environments, *Information Processing & Management*, 60(6), <https://doi.org/10.1016/j.ipm.2023.103482>.
- Cheng, B. H., & McCarthy, J. M. (2018). Understanding the dark and bright sides of anxiety: A theory of workplace anxiety. *Journal of Applied Psychology*, 103(5), 537–560. <https://doi.org/10.1037/apl0000266>
- Di Benedetto, M., Towt, C. J., & Jackson, M. L. (2019). A cluster analysis of sleep quality, Self-Care Behaviors, and mental health risk in Australian university students. *Behavioral Sleep Medicine*, 18(3), 309–320. <https://doi.org/10.1080/15402002.2019.1580194>
- DiGiacomo, M., Davidson, P., Vanderpluym, A., Snell, R., & Worrall-Carter, L. (2007). *Australian Critical Care*, 20(2), 69-76.
- Fatusi, A. O., & Hindin, M. J. (2010). Adolescents and youth in developing countries: Health and development issues in context. *Journal of Adolescence*, 33(4), 499–508. <https://doi.org/10.1016/j.adolescence.2010.05.019>
- Federal Bureau of Statistics. Government of Pakistan. (2010). Labor force survey 2009-2010. Retrieved August 7, 2018. from <http://www.pbs.gov.pk/content/labour-force-survey-2009-10>.
- Haqqani, S. (2009). Psychosocial adaptation of individuals disabled due to spinal cord injury as a result of earthquake of October 8, 2005 in a tertiary care unit. [Unpublished Masters thesis]. Fatima Jinnah Women University.
- Hashmi, M. A., Aftab, A. & Khawaja, I. S., (2014). Anxiety and Depression in Pakistani Medical Students: A Multi-Center Study. *Journal of Society for development in new net environment in B&H*, 8(7). 813-820.
- Islamabad Policy Research Institute (2018). Pakistan’s youth Bulge: Human Resource development challenges. Retrieved July, 27, 2018. From <http://www.ipripak.org/>
- Jamil, Z., & Baseer, A. (2023). The Lived Experiences of Burnout in Clinical Psychologists in Pakistan: a phenomenological study. *NUST Journal of Social Sciences and Humanities*, 9(2), 1–30. <https://doi.org/10.51732/njssh.v9i2.175>
- Khalid, A. (2014). Correlates of Mental Health among Pakistani Adolescents: An exploration of the interrelationship between attachment, parental bonding, social support, emotion regulation and cultural orientation using Structural Equation. [PhD Thesis, The University of Edinburgh]. Edinburgh Research Archives. <https://era.ed.ac.uk/bitstream/handle/1842/15925/Khalid2015.pdf?isAllowed=y&sequence=2>

- Khan, F. U., Rahman, Z., Rahman, F., Ahmad, W., Muhammad, W., Nazir, N., Irshad, M. I., & Khan, M. H. N. (2023). Mental health problems & its causes: A case study of university students in Pakistan. *RES MILITARIS*, 13(2), 2852–2861. Retrieved from <https://resmilitaris.net/index.php/resmilitaris/article/view/2710>
- Kaur, I. (2023). A Study on Depression, Anxiety, Stress & Burnout among Psychology Students. *International Journal of Research Publication and Reviews*, 4(1), 390-395.
- Khan, H., Kalia, S., Itrat, A., Khan, A., Kamal, M., Khan, M. A., Khalid, R., Khalid, S., Javed, S., Javed, S., Umer, A., & Naqvi, H. (2007). Prevalence and demographics of anxiety disorders: a snapshot from a community health centre in Pakistan. *Annals of General Psychiatry*, 6(1). <https://doi.org/10.1186/1744-859x-6-30>
- Kinderman, P., Schwannauer, M., Pontin, E., & Tai, S. (2011). The development and validation of a general measure of well-being: the BBC well-being scale. *Quality of Life Research*, 20(7), 1035–1042. <https://doi.org/10.1007/s11136-010-9841-z>
- Lovibond, S.H., and Lovibond, P.F. (1995). *Manual for Depression Anxiety and Stress Scales* (2nd Ed.) Sydney: Psychology Foundation.
- Lux, M. E., Merino, M. M., Viviescas, A., & Escobar, J. M. T. (2023). The other pandemic: Mental illness in young people from low and middle-income countries. *Current Opinion in Psychology*, 52, 101642. <https://doi.org/10.1016/j.copsyc.2023.101642>
- Naz, N., Iqbal, S., & Mahmood, A. (2017). Stress, Anxiety and Depression among the Dental Students of University College of Medicine and Dentistry Lahore; Pakistan. *Journal of Dental Education*, 45(3), 210-225.
- O'Connor, K., Neff, D. M., & Pitman, S. (2018b). Burnout in mental health professionals: A systematic review and meta-analysis of prevalence and determinants. *European Psychiatry*, 53, 74–99. <https://doi.org/10.1016/j.eurpsy.2018.06.003>
- Olos, L. & Hoff, E. (2006). Gender Ratios in European Psychology. *European Psychologist*, 11(1). Doi:<https://doi.org/10.1027/1016-9040.11.1.1>
- Oftedal, S., Fenton, S., Hansen, V., Whatnall, M., Ashton, L., Haslam, R., Hutchesson, M. J., & Duncan, M. J. (2023). Changes in physical activity, diet, sleep, and mental well-being when starting university: A qualitative exploration of Australian student experiences. *Journal of American College Health*, 1–10. <https://doi.org/10.1080/07448481.2023.2194426>
- Paloş, R., Maricuţoiu, L. P., & Costea, I. (2019). Relations between academic performance, student engagement and student burnout: A cross-lagged analysis of a two-wave study. *Studies in Educational Evaluation*, 60, 199–204. <https://doi.org/10.1016/j.stueduc.2019.01.005>
- Pan, Y., Li, F., Liang, H., Shen, X., Bing, Z., Cheng, L., & Dong, Y. (2024). Effectiveness of Mindfulness-Based Stress Reduction on Mental Health and Psychological Quality of Life among University Students: A GRADE-Assessed Systematic Review. *Evidence-based Complementary and Alternative Medicine*, 2024, 1–30. <https://doi.org/10.1155/2024/8872685>
- Pittman, M., & Haley, E. (2023). Cognitive load and social media advertising. *Journal of interactive advertising*, 23(1), 33-54. <http://doi.org/10.1080/15252019.2022.2144780>
- Swords, B. A., & Ellis, M. V. (2017). Burnout and vigor among health service psychology doctoral students. *The Counseling Psychologist*, 45(8), 1141–1161. <https://doi.org/10.1177/0011000017747548>
- Vivolo, M. Owen, J., & Fisher, P. (2024). Psychological therapists' experiences of burnout: A qualitative systematic review and meta-synthesis. *Mental health and prevention*, 33. <https://doi.org/10.1016/j.mhp.2022.200253>
- Whiteford, H., et al. (2013). "Global burden of disease attributable to mental and substance use disorders: findings from the Global Burden of Disease Study 2010." *Lancet* 382, 1575-86.
- World Economic Forum. (2024). *Mental Health*. Retrieved January 4, 2024. From <https://intelligence.weforum.org/topics/a1Gb0000000pTDbEAM>
- Zheng, M., Guo, X., Chen, Z., Deng, J., & Hu, M. (2023). Association between interpersonal relations and anxiety, depression symptoms, and suicidal ideation among middle school students. *Front. Public Health*, 11. <https://doi.org/10.3389/fpubh.2023.1053341>