

ORIGINAL ARTICLE

Psychological Effects of Sedentary Behaviour Among Medical Students

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ABSTRACT

Introduction: Physical and sedentary activities have been distinguished as possibly modifiable hazard components for many diseases, counting mental ailment, and may be effective targets for open health policy and intervention. However, the relative commitment of physical activity versus sedentary conduct to mental wellbeing is less clear.

Objective: To identify the psychological effects of sedentary behaviour among medical students

Study Design: Quantitative cross sectional

Settings: M Islam Medical College Gujranwala

Duration: Three months i.e. 1st January 2022 to 30th March 2022

Data Collection procedure: The study was conducted at M Islam Medical College Gujranwala to identify the psychological effects of sedentary behaviour among medical students. The cross sectional study conducted over 200 medical students. The Korean form of the Perceived Stress Scale (PSS), which was developed by Cohen et-al, was utilized in this study. Anxiety was measured with the Beck Anxiety Inventory (BAI), a self report scale that was created by Beck et al. Depression was measured utilizing the Center for Epidemiological Studies-Depression Scale (CES-D).

Results: The total number of students who were participated in the study was 200 in which 82 were males and 118 were females. Psychological effects of sedentary behaviour among medical students on hourly basis, week days and on weekends were calculated. BMI, Mean and standard deviation were calculated in regard to stress, anxiety and depression.

Practical implication

Conclusion: Stress, anxiety, and depression are genuine mental wellbeing issues among college student groups. The sedentary behavior of college students was found to be significantly related to their mental problems in the present study. Be that as it may, until now, research has rarely been conducted to identify the mechanisms or interceding variables that clarify the relationship between sedentary behavior and stress, anxiety, and depression.

Keywords: Sedentary behaviour, stress, psychological, anxiety, depression

INTRODUCTION

Physical and sedentary activities have been distinguished as possibly modifiable hazard components for many diseases, counting mental ailment, and may be effective targets for open health policy and intervention. However, the relative commitment of physical activity versus sedentary conduct to mental wellbeing is less clear^(1, 2). It is assessed that more than 20% of youths meet diagnostic criteria for a mental disorder before the age of 18 and many mental disorders have their beginning in adolescence. Given that the onset of mental illness occurs at a generally early age compared with other chronic sicknesses, it is particularly important to get it the connects of mental wellbeing to distinguish possibly modifiable risk components as well as to pick up knowledge into possibilities for intervention. Physical activity such as interest in sports and exercise has benefits for physical wellbeing and has been linked within the essential and secondary prevention of a assortment of underlying chronic medical conditions and has moreover been demonstrated as an effective supplement to treatment for mental health problems^(3, 4). A sedentary lifestyle has been related with poor mental health; however the refinement between the two is not frequently inspected. Mediating early to reduce sedentary exercises and increase physical movement may decrease the chances of creating mental illness. The side effects of misery and anxiety may incorporate misfortune of interest in previously enjoyed activities, loss of vitality, excessive anxiety, trouble controlling stress, restlessness and other indications which may increase sedentary action and diminish physical activity frequency. Among teenagers, higher levels of screen time were associated with poorer mental wellbeing status and that a dose response may exist. In any case, the evidence is mixed, with a few studies appearing no connect between inactive movement and depressive indications in adolescents^(5, 6). Individuals with depressive disorders have been illustrated to spend more time engaged in sedentary exercises such as TV observing, web utilize

and video gaming. Participation in inactive activities, such as video games, has frequently been depicted as a adapting component for discouragement. Inactive action may also contribute to the advancement of poor mental health outcomes free of physical activity. A few preliminary results have proposed that inclination for online communications increases an individual's evasion of face to face communications which may lead to social isolation and depression. It is unclear whether sedentary conduct on its own increases hazard for sadness or whether the affiliation between sedentary conduct and diminished physical action drives these association-adolescents may be both exceptionally physically dynamic additionally lock in sedentary activities^(7, 8).

MATERIAL AND METHODS

The study was conducted at M Islam Medical College Gujranwala to identify the psychological effects of sedentary behaviour among medical students. The cross sectional study conducted over 200 medical students of M Islam medical college. Pre validated questionnaire was used. Simple random method sampling techniques was used to collect the data in which all medical students have the equal chance to participate. The data was collected after taking the informed consent. In this study, we measured sitting time of medical students' life characteristics. Daily normal sedentary behavior was explored for weekdays and weekends independently. Times for each were calculated as weighted averages of 5/7 for weekdays and 2/7 for ends of the week. The Korean form of the Perceived Stress Scale (PSS), which was developed by Cohen et-al, was utilized in this study. Anxiety was measured with the Beck Anxiety Inventory (BAI), a self report scale that was created by Beck et al. Depression was measured utilizing the Center for Epidemiological Studies-Depression Scale (CES-D). Data was collected and entered into SPSS version 23 and analyzed for results.

RESULTS

The total number of students who were participated in the study was 200 in which 82 were males and 118 were females. Psychological effects of sedentary behaviour among medical students on hourly basis, week days and on weekends were calculated. Stress levels according to demographic characteristics were inspected to study the relationship between independent variable as sedentary behaviour and dependent variables include stress, anxiety and depression. Results showed significant changes in students with underlying associated diseases and self

management for their health. BMI were also showed significant changes as obese patient had more depression as compared to other ones. Those students who had underlying diseases were more depressed and unable to do self management as compared to those who were without any sort of disease. Self management student had lower depression. Also when compared to socioeconomic status those who were low socioeconomic status more depression. Sedentary behavior during weekdays and ends of the week were found to have a significant impact on stress, anxiety, and depression in all the ways

Table 1: Demographic profile & Psychological parameters (n=200)

No.	Variable	Classification	Number N=	Stress (1-5) Mean + SD	Anxiety (0-3) Mean + SD	Depression (1-5) Mean + SD
1	Gender	Male	82	2.50+0.60	0.39+0.32	2.18+0.59
		Female	118	2.85+0.65	0.50+0.52	2.60+0.70
2	Living with parents	Yes	75	2.75+0.70	0.54+0.52	2.57+0.75
		No	125	2.89+0.68	0.58+0.46	2.56+0.70
3	BMI	Underweight	45	2.99+0.60	0.64+0.53	2.70+0.62
		Normal	110	2.85+0.59	0.52+0.48	2.45+0.72
		Overweight	35	3.10+0.69	0.72+0.55	2.89+0.71
		Obesity	10	2.80+0.75	0.40+0.33	2.42+0.73
4	Associated disease	Yes	15	3.11+0.65	0.70+0.62	1.90+0.69
		No	185	2.92+0.64	0.54+0.48	2.30+0.70
5	Socioeconomic status	Very high	50	2.60+0.60	0.59+0.64	2.40+0.80
		High	60	2.72+0.61	0.56+0.63	2.39+0.75
		Moderate	85	2.90+0.65	0.51+0.45	2.58+0.74
		Low	5	3.01+0.50	0.95+0.44	2.60+0.69
6	Health self management	Very much	25	3.10+0.80	0.62+0.79	2.39+0.64
		Little	110	2.90+0.63	0.60+0.47	2.68+0.70
		Not at all	65	2.75+0.62	0.80+0.51	2.90+0.74

Table 2: Descriptive Analysis of Sedentary behaviour

No	VARIABLE	Mean	SD	Min	Median	Max
1	Sedentary behaviour (hour)	6.45	2.90	0.38	6.45	16.00
2	Sedentary behaviour during weekdays	7.35	2.96	0.55	7.21	16.00
3	Sedentary behaviour during weekends	5.90	3.10	0.04	5.00	16.00
4	Stress	2.25	0.45	1.05	2.35	3.85
5	Anxiety	0.45	0.39	0.00	0.35	2.10
6	Depression	1.90	0.60	1.00	2.10	3.55

DISCUSSIONS

This study was conducted to decide the degree and relationship between sedentary behavior, stress, anxiety, and depression in undergraduate’s medical students in Pakistan. A clinical and public wellbeing guideline for sedentary behavior is not yet built up; in any case, a few studies appear the negative impacts of long sitting hours, such as a 18–45% mortality rate, compared to those with shorter sitting times. In this study medical students experience a decrease in physical movement in adolescence compared to youths in several nations due to variables such as entrance exam planning, and the earlier level of physical action is not recovered when they reach college. Moreover, numerous other studies like Korean university students confront issues such as weight, anemia, and gastrointestinal diseases, which require dynamic wellbeing management including physical activity^(9, 10).

The other studies utilizing the same tool, the stress level of among American university students and Mexican university students were high. Anxiety levels were too higher than those found among Spanish university students, which were measured in another study utilizing the same tools. In expansion, depression levels were higher than those found among college students from China and Hong Kong^(11, 12).

Stress, anxiety, and depression are major mental health problems experienced not only by Pakistani students but also by university students around the world. These inhibit students’ academic performance, social connections, and alteration to college life. In addition, the included pressure from college life contains a inactive impact on their practical life also.

This study showed that expanded sedentary behavior elevated stress, anxiety, and depression in spite of controlling for

perceived economic status, BMI, disease, and self-management for wellbeing^(13, 14).

CONCLUSION

Stress, anxiety, and depression are genuine mental wellbeing issues among college student groups. The sedentary behavior of college students was found to be significantly related to their mental problems in the present study. Be that as it may, until now, research has rarely been conducted to identify the mechanisms or interceding variables that clarify the relationship between sedentary behavior and stress, anxiety, and depression.

REFERENCES

- Meyer J, McDowell C, Lansing J, Brower C, Smith L, Tully M, et al. Changes in physical activity and sedentary behavior in response to COVID-19 and their associations with mental health in 3052 US adults. *International journal of environmental research and public health.* 2020;17(18):6469.
- Gallè F, Sabella EA, Ferracuti S, De Giglio O, Caggiano G, Protano C, et al. Sedentary behaviors and physical activity of Italian undergraduate students during lockdown at the time of COVID- 19 pandemic. *International journal of environmental research and public health.* 2020;17(17):6171.
- Rivera P, Nys B, Fiestas F. Impact of COVID-19 induced lockdown on physical activity and sedentary behavior among university students: A systematic review. *Medwave.* 2021;21(8).
- Felez-Nobrega M, Bort-Roig J, Briones L, Sanchez-Niubo A, Koyanagi A, Puigoriol E, et al. Self-reported and activPALTM-monitored physical activity and sedentary behaviour in college students: Not all sitting behaviours are linked to perceived stress and anxiety. *Journal of Sports Sciences.* 2020;38(13):1566-74.

5. Gilchrist JD, Battista K, Patte KA, Faulkner G, Carson V, Leatherdale ST. Effects of reallocating physical activity, sedentary behaviors, and sleep on mental health in adolescents. *Mental Health and Physical Activity*. 2021;20:100380.
6. Dillon K, Rollo S, Prapavessis H. A combined health action process approach and mHealth intervention to reduce sedentary behaviour in university students—a randomized controlled trial. *Psychology & Health*. 2022;37(6):692-711.
7. Müller AM, Chen B, Wang NX, Whitton C, Direito A, Petrunoff N, et al. Correlates of sedentary behaviour in Asian adults: a systematic review. *Obesity Reviews*. 2020;21(4):e12976.
8. Xiao H, Shu W, Li M, Li Z, Tao F, Wu X, et al. Social distancing among medical students during the 2019 coronavirus disease pandemic in China: disease awareness, anxiety disorder, depression, and behavioral activities. *International journal of environmental research and public health*. 2020;17(14):5047.
9. Bao R, Chen S-T, Wang Y, Xu J, Wang L, Zou L, et al. Sedentary behavior research in the Chinese population: a systematic scoping review. *International Journal of Environmental Research and Public Health*. 2020;17(10):3576.
10. Carballo-Fazanes A, Rico-Díaz J, Barcala-Furelos R, Rey E, Rodríguez-Fernández JE, Varela-Casal C, et al. Physical activity habits and determinants, sedentary behaviour and lifestyle in university students. *International journal of environmental research and public health*. 2020;17(9):3272.
11. Vancampfort D, Van Damme T, Stubbs B, Smith L, Firth J, Hallgren M, et al. Sedentary behavior and anxiety-induced sleep disturbance among 181,093 adolescents from 67 countries: a global perspective. *Sleep medicine*. 2019;58:19-26.
12. Dėdelė A, Miškinytė A, Andrušaitytė S, Bartkutė Ž. Perceived stress among different occupational groups and the interaction with sedentary behaviour. *International Journal of Environmental Research and Public Health*. 2019;16(23):4595.
13. Stockwell S, Schofield P, Fisher A, Firth J, Jackson SE, Stubbs B, et al. Digital behavior change interventions to promote physical activity and/or reduce sedentary behavior in older adults: a systematic review and meta-analysis. *Experimental gerontology*. 2019;120:68-87.
14. Rodríguez-Ayllon M, Estévez-López F, Cadenas-Sanchez C, Gracia-Marco L, Lubans DR, Ortega FB, et al. Physical activity, sedentary behaviour and mental health in young people: a review of reviews. *Adolescent health and wellbeing*. 2019:35-73.