Research Article

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Impact of Sports Activities on Stress among Medical and other Undergraduate Students

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Abstract

***Objective**:*
To examine the impact of sports activities on stress among medical and undergraduate's students.

Material and Methods:
It's a descriptive cross-sectional study undertaken in four private sectors teaching institutions situated in Faisalabad. Sample consisted of 150 students. 75(50%) students were selected form medical and 75(50%) students (20 to 30 years) were having undergraduate level of education. Data was collected through self-administered structured questionnaire. Results confirmed that the internal consistency (reliability analysis) of all questionnaires in this study are in adequate values of Cronbach's alpha (.83 to .94).

Results:
Out of 150 study participants, there were 86 male and 64 female participants. Mean age of participants was 22.75 years±1.14. The study showed deep insights on the relationship between stress of adults and physical activity. The result displays that rational sports activity is positive significant ($p < .01$) correlate with stress ($r = -.43$). While, depend sports activity is also positive significant ($p < .01$) correlate with stress ($r = .26$). It means if rational sport activity will increase then stress will decrease. Additionally, rational sports activity has significant negative impact on stress, while depend sports activity has significant positive impact on stress.

Conclusion:
It is concluded that sports activity has significant impact on stress among medical and undergraduate students. Counselling sessions should be offered to student to reduce their stress and engage in sport activities.

***Key Words:** Stress, Sports Activities, Medical students, Undergraduates Students*

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INTRODUCTION

Physical activities help students to develop knowledge, attitude, motor and behavioral skills which are required to maintain physically active lifestyle. Regular sports activity not only reduces the stress level but also has beneficial effect on body as well as on mind.

The Hungarian-born Janos Selye in 1964, developed the theory of stress. The general adaptation syndrome (GAS) reflect the non-specific effects of stress on the body and response. A significant number of studies explored the physiological side of stress, primarily through the heart frequency, then the psychological examinations came to the fore. Since then amongst numerous studies and theories, the examination of negative stress (distress) became more and more popular. According to this theory, sports and physical activity as a defense mechanism plays a key role between the 3 types of coping mechanisms (emotional feeling, cognitive; intelligence-oriented and evading) (Nagykáldi, 1998).

Balogh, (2013) stated that physical activity is not only the health-shaping component of corporal, somatic features, but also plays a key role in the spiritual and psychical health. Sports activities are very important for students' development and students improve mental health and many other skills through sports activities and reduce the stress and anxiety levels. Medical education is inherently stressful and demanding. Comparing stress between medical and non-medical students, literature review shows that medical students perceive higher stress (Sohail, 2013). Any level of stress, if left unattended, can lead to sleeping disorders, burnout, and drop out, high prevalence of depression, anxiety and psychological distress among medical students than in general population (Sohail, 2013).

In the present study, stress was measured using the Depression Anxiety Stress Scale (DASS). Low scores on the DASS stress subscale indicated low levels of stress and high scores indicated high levels of stress in adults. Stress is related to internal and external conditions. Stress is a person's feeling that causes anxiety and other mood disorders and these conditions are present in every sphere of life (Petraglia et al., 2015).

Exercise-like sports and physical activity are associated with a number of positive results on a student's physical, mental, social and spiritual health, improve cognitive, emotional and behavioral patterns and reduce the widespread rate of depression and anxiety (Jouper, et al., 2011). Medical students face stress from the beginning of the training process. However, appropriate strategies such as problem solving, positive interpretation, and social support may enable students to respond in a way that leads to adaptation (Tran, 2011). Very few studies have been done so far to assess the effects of stress on students, and even more less studies have been done on the medical student population. In the present research, the researchers attempted to investigate the impact of sport activities on stress among medical and undergraduate students.

The major aim of this study is to identify the sources of stress in medical students and their impact on sport activities, and also to study the same on undergraduate students. Therefore, present study is an attempt to bridge a gap, that how medical education contributes towards

stress and sports activity among medical students as compared with non-medical students because locally medical education is considered somewhat different and higher as compared with other graduation studies.

MATERIALS & METHODS

Objective of the Study: To examine the impact of sports activity on stress among medical and undergraduate students

Hypotheses: H_1: The high the stress, the low the sports activity among medical student.

H_2: The low the stress level the high the sports activity among non-medical students.

Research Design: Since the phenomenon under study in an existing condition, therefore design of study is descriptive cross-sectional. Study duration was from February 2020 to Dec 2020.

Population of the Study: The population of study were the found medical and undergraduate students of Faisalabad.

Sample of the Study: Sample consisted of 150 students including Independent Medical College Faisalabad, G.C University Faisalabad, Allama Iqbal Open University Faisalabad and Degree college of Faisalabad. There were 86 male and 64 female participants. The age ranges of participants taken were from 20 to 30 years.

Sampling Technique: Purposive sampling technique was used in this study to select the sample.

Inclusion/Exclusion Criteria: Medical and undergraduate students with any history or current psychological problem were excluded from this research. Medical and undergraduate student who were having less than 1 year of education will also excluded from study.

Data Collection Procedure**:** Structured questionnaire adapted from various published studies was used to collect data from study participants. Personal information like age, gender, years of education, father education and occupation, mother education and occupation and family structure were obtained. department.

Data was collected from Independent Medical College Faisalabad, G.C University Faisalabad, Allama Iqbal Open University Faisalabad and Degree college of Faisalabad. Information from study participants was obtained after getting informed consent and explaining them the importance and objectives of research.

Data Analysis: Statistical Package for Social Science (SPSS) version 20 was used for the statistical analysis. The independent sample t-test was applied to measure the stress among medical and undergraduate's students on the basis of gender, age, experience.

Ethical Considerations**:** Ethical considerations were taken into consideration and confidentiality of the participants respected. Consent was taken from participants after explaining the purpose of study.

RESULTS

The Table1 obtains the percentage and frequency of respondent's characteristics according to demographics. A sample of 150 collected from students with the average (mean) age of (M± = 22.75±1.14). In gender demographic, male female participants were selected not equally (Male = 86 and Female = 64). In education,75(50%) students were selected form medical and 75(50%) students were having undergraduate level of education.

Table 1. Frequency of Demographic Variables (N=150)

Respondent's Characteristics		***f (%)***	***M (SD)***
Age			22.75 (1.14)
Gender	Male	86 (57.3)	
	Female	64 (42.7)	
Education	Medical Students	75 (50.0)	
	Undergraduate	75 (50.0)	

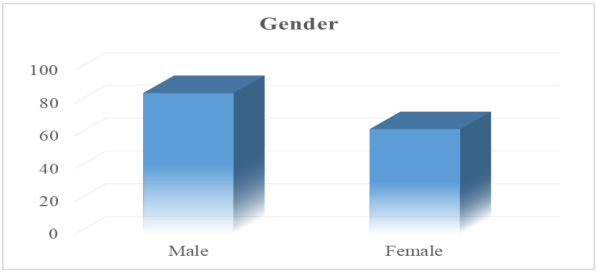

Figure 1. ***Frequency of Distribution of Respondents with Gender (N=150)***

The figure 1 show that in gender demographic, male female participants were selected not equally (Male = 86 and Female = 64)

Table 2. Psychometric and Descriptive Analysis (N=150)

Variables				***Range***		
	M	***SD***	**A**	***Min***	***Max***	***Skew***
Rational Sports Activity	12.21	4.20	.88	9	24	1.55
Depend Sports Activity	12.81	3.98	.83	9	25	1.11
Stress	16.60	9.26	.93	0	28	-.58

The Table 2 shows results and confirms that the internal consistency (reliability analysis) of all questionnaires in this study are in adequate values of Cronbach's alpha (.83 to .94). Whereas the skewness for data normality is also in adequate values for all variables.

Table 3. For the Impact of Sports Activity (Rational and Depend) on Stress (N=150)

	Stress	
Predictors	**B**	**95% *CI***
Constant	21.47**	[15.01, 27.93]
Rational Sports Activity	-.87**	[-1.19, -.55]
Depend Sports Activity	.45*	[.11, .79]
R^2	.22	
F	20.56**	

*p <.05; **p <.01; B for Unstandardized regression coefficient; CI for Confidence interval

The result of table 3 shows that both sports activities (rational and depend) are accepted to be significant predictors of stress and contribute 22% (R^2 = .10). Additionally, rational sports activity has significant negative impact on stress, while depend sports activity significant positive impact on stress.

DISCUSSION

The aim of this research is to measure the impact of sport activities on stress among medical and undergraduate students. A sample of 150 collected from students with the average (mean) age of (M± = 22.75± 1.14). In gender demographics, male female participants were selected not equally (Male = 86 and Female = 64). In education, 75(50%) students were selected form medical and 75(50%) students were having undergraduate educational level. The results of the internal consistency (reliability analysis) of all questionnaires in this study are in adequate values of Cronbach's alpha (.83 to .94). Whereas the skewness for data normality is also in adequate values for all variables.

Results of correlation analysis revealed that rational sports activity is negative significant correlate with depend sports activity and stress. While, depend sports activity is positive significant correlate with stress. Sports activities help to change emotions and sports experiences is a method that grows emotions (Ubago-Jiménez, González-Valero, Puertas-Molero, &García-Martínez, 2019). Thus, sports activities enhance optimistic mood, pleasant and positive emotions, and decrease the level of stress. Sports activities offer chance to face tasks, collaborate being part of a team and contribute with oneself (Kerr & Kuk, 2001). Whereas, plethora of past studies found negative link between sports activities and stress (Assis et al., 2008; Stults-Kolehmainen& Sinha, 2014).

Additionally, the results of multiple regression analysis found both sports activities (rational and depend) are accepted to be significant predictors of stress. Moreover, rational sports activity has significant negative impact on stress, while depend sports activity has significant positive impact on stress.

The existing literature mostly accomplished there, is predicting relationship between sports activities and stress, and that sports actives reduce the negative impact on stress. In other words, sports activities reduce the level of stress, individuals with more engagement in sports activities have lesser chance of mental health problems such as stress (Gerber & Pühse, 2009; Holmes, Ekkekakis & Eisenmann, 2010). Salmon (2001) considered that the stress and sport activities association is open to understanding, and individuals who are less troubled by stress simply have more capacity to be more ready to engage in sports activities. High stress individuals will more involve in un-healthy behaviors, for instance lack of sports activities. Studies investigative overall sports/physical activities predict negative health (such as stress) (Kimball & Freysinger2003; Korotkov, 2008). Gupta, et al., (2012) examined the level of physical activity and stress among undergraduate medical students in India, has clearly defined mental health issues in undergraduate students with high rates of depression, anxiety and stress. The study showed high levels of stress in medical students.

Ibrahim, et al., (2013) conducted a similar study in Malaysia. The study showed a link between sports participation and study performance at a Malaysian university. This study showed that sports activities were very important for the development of students and students improve many mental health skills and other abilities through sports activities. They reduce stress levels and depression through physical activity such as exercise and sports activities. Christie, et al., (2012) said that exercise has the effect of reducing anxiety, depression and increases self-esteem. The results of most studies show that exercise (doing physical activity) is very effective in reducing stress and depression, increasing mental health, improving quality of life, reducing success and worrying about losing.

Limitations of the study: In this research, the sample was collected only form Faisalabad district and the generalizability cannot be claimed for whole Punjab, Pakistan. So, it is recommended that in future, researches should be conducted on the broader level of sample across the whole province of Punjab, Pakistan.

Recommendations: In order to improve the physical activity of adults, prevention and intervention programs and seminars must be launched to reduce their symptoms of stress. Counselling sessions should be offered to student to reduce their stress and engage in sport activities.

CONCLUSION

It is concluded that sports activity has significant impact on stress among medical and undergraduate students. Rational sports activity is negatively correlated with stress while depend sports activity increase the stress level.

Conflict of interest

Authors declare that there is no conflict of interest.

Ethical approval

Ethical and other necessary approvals were taken from Institutional Review Board of the Independent Medical College, Faisalabad, Pakistan.

Consent for Publication

All authors approved manuscript for publication.

REFERENCES

Assis, M. A. D., Mello, M. F. D., Scorza, F. A., Cadrobbi, M. P., Schooedl, A. F., Silva, S. G. D., ... &Arida, R. M. (2008). Evaluation of physical activity habits in patients with posttraumatic stress disorder. *Clinics*, *63*(4), 473-478.

Balogh, L. (2013). (University of Szeged, Intitute of Physical Education and Sport Sciences, Hungary) To be in the zone-stress and sport performance.

Christie, B. R., Brocardo, P. S., Boehme, F., Patten, A., Cox, A., & Gil-Mohapel, J. (2012). Anxiety-and depression-like behaviors are accompanied by an increase in oxidative stress in a rat model of fetal alcohol spectrum disorders: Protective effects of voluntary physical exercise. *Neuropharmacology*, *62*(4), 1607-1618.

Gerber, M., &Pühse, U. (2009). Do exercise and fitness protect against stress-induced health complaints? A review of the literature. *Scandinavian journal of public health*, *37*(8), 801-819.

Gupta, A., Rao, C. R., Darshan, B. B., Das, N., Rajan, V., &Bhogun, M. (2012). Practice of physical activity among future doctors: A cross sectional analysis. *International journal of preventive medicine*, *3*(5), 365.

Holmes, M. E., Ekkekakis, P., &Eisenmann, J. C. (2010). The physical activity, stress and metabolic syndrome triangle: a guide to unfamiliar territory for the obesity researcher. *Obesity reviews*, *11*(7), 492-507.

Ibrahim, S., Karim, N. A., Oon, N. L., &Ngah, W. Z. W. (2013). Perceived physical activity barriers related to body weight status and sociodemographic factors among Malaysian men in Klang Valley. *BMC public health*, *13*(1), 275.

Jouper, J., Hassmén, P., & Johansson, M. (2011). Acute effects of Qigong exercise on mood and anxiety.

Kerr, J. H., & Kuk, G. (2001). The effects of low and high intensity exercise on emotions, stress and effort. *Psychology of sport and exercise*, *2*(3), 173-186.

Kimball, A., &Freysinger, V. J. (2003). Leisure, stress, and coping: The sport participation of collegiate student-athletes. *Leisure sciences*, *25*(2-3), 115-141.

Korotkov, D. (2008). Does personality moderate the relationship between stress and health behavior? Expanding the nomological network of the five-factor model. *Journal of research in Personality*, *42*(6), 1418-1426.

Nagykáldi, C. (1998). Stress, arousal and anxiety in sports performance. *Sports science*, *2*, 10-14.

Petraglia, F., Podfigurna-Stopa, A., Luisi, S., Regini, C., Katulski, K., Centini, G., & Meczekalski, B., (2015). Mood disorders and quality of life in polycystic ovary syndrome. *Gynecological endocrinology*, *31*(6), 431-434.

Salmon, P. (2001). Effects of physical exercise on anxiety, depression, and sensitivity to stress: a unifying theory. *Clinical psychology review*, *21*(1), 33-61.

Sohail, N. (2013). Stress and academic performance among medical students. *J Coll Physicians Surg Pak*, *23*(1), 67-71.

Stults-Kolehmainen, M. A., & Sinha, R. (2014). The effects of stress on physical activity and exercise. *Sports medicine*, *44*(1), 81-121.

Tran, L. T. (2011). Committed, face-value, hybrid or mutual adaptation? The experiences of international students in Australian higher education. *Educational Review*, *63*(1), 79-94.

Ubago-Jiménez, J. L., González-Valero, G., Puertas-Molero, P., &García-Martínez, I. (2019). Development of Emotional Intelligence through Physical Activity and Sport Practice. A Systematic Review. *Behavioral Sciences*, *9*(4), 44-57.