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COMPARISON OF STAMINA LEVEL FOR PERFORMING PHYSICAL ACTIVITIES BETWEEN THE MALE PARTICIPANTS AND MALE NON-PARTICIPANTS STUDENTS OF PHYSICAL EDUCATION AT COLLEGE LEVEL

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Abstract:
The regular performance of physical activities has lots of benefits in our lives. Exercise and physical activity during adolescence may positively effect on the physical fitness levels and body composition. If a person engages him/herself in physical activities will remain physically fit and can maintain healthy body composition which is the key of life. This research is based on male colleges of northern Punjab. There is total 112 males' colleges in the northern Punjab from which 21 colleges were selected and 210 participators and non-participators were collected. Four physical activities were compared like speed, general endurance, flexibility and power. This research revealed that the participators have more stamina as compare to non- participators in terms of speed and flexibility. The general endurance and power levels were same in the both groups. The mean difference in the speed is 11.58095 seconds and general endurance 2.91905 feet were found in both groups. The flexibility mean difference is 0.29381 centimeters and power 0.22019 feet were obtained in participators and non-participants.

Keywords: Physical Activity, Performance, Participants, non-participants

Introduction:

Any healthy lifestyle must include physical activity, and this applies to more than just physical well-being. Making a good connection between physical exercises and raising student accomplishment in the classroom could be the only way to demonstrate the value of exercise and physical education in our academic communities.

Studies have discovered beneficial relationships between academic success. The academic success of students should demonstrate their readiness to begin post-compulsory education. However, it is unknown how much academic success affects starting postcompulsory education. When students started in post-compulsory education, we looked at the relationships between academic achievement and physical exercise. The union contract for New York City (NYC) states that the maximum number of pupils in the gym at one time for physical education in high school is 50, but there is currently no such restriction for younger grades. (NYC Teacher contract, 2018).

Exercise and physical activity during adolescence may positively effect on the physical fitness levels and body composition. If a person engages him/herself in physical activities will remain physically fit and can maintain healthy body composition which is the key of life (Ruiz et al., 2010).

Physical activity sort of motion that quickens your respiration and pulse rate is considered to be physically active. Your general well-being and health will benefit from physical activity. It provides advantages for people of all ages, such as lowering the chance of developing long-term illnesses, enhancing sleep, boosting power, and enhancing both one's physical and mental health. People may simply increase their daily activity using simple approaches, which will help them attain the essential exercise levels. Lack of exercise is one of the key indicators of risk for illnesses that are not communicable death. Those who are not sufficiently or insufficiently active have a 22% to 32% greater risk of passing away than those who are suitably active.

This represents the valuing element in the symbiosis with physical education, both activities becoming permanent during the entire period of education of the young generation. “The fact that the formation of modern humans supposes his development from a physical, social, intellectual, ethical and aesthetical points of view must be kept in mind, in connection to the demands of the society and according to his aptitudes, thus leading to an increase of his standard of living and of a social development” (Dacica & Colab, 2012).

Physical Education is expected to have an impact on learning outcomes, namely changes in student behavior. This change in behavior should embrace all the potential in children that can be developed through education. One of them is physical education, which is an integral part of overall education, aims to develop aspects of physical fitness, movement skills, critical thinking skills, social skills, reasoning, emotional stability, action moral, aspects of a healthy lifestyle and the introduction of a clean environment through selected physical, sporting and health activities that are planned systematically in order to achieve national education goals. Physical education is an important part of the education system (Juliantine, 2016).

Literature Review

Tomporowski, McCullick, Pendleton, and Pesce, (2015), Understanding the effects of PA on students' mental activity, classroom behavior, and academic performance has received a lot of scholarly attention due to the significant negative effects on educational practices at the population level.

According to Martin (2010) examining the literature relating to „physical activity, fitness and academic achievement“ provided the following key points: The large majority of university-based, internationally published research in this field has found a positive association between children’s physical activity participation and academic achievement. In 2018, the World Health Organization’s (WHO) Global Strategy on Physical Activity deployed a slight variation of Caspersen's definition. Instead of activity resulting in energy expenditure, the WHO referred to bodily movement that “requires energy expenditure”.

Regular physical activity, such as walking, cycling, wheeling, doing sports or active recreation, provides significant benefits for health. Some physical activity is better than doing none. By becoming more active throughout the day in relatively simple ways, people can easily achieve the recommended activity levels. Physical inactivity is one of the leading risk factors for non-communicable diseases mortality. People who are insufficiently active have a 20% to 30% increased risk of death compared to people who are sufficiently active.

According to WHO in 2018, any physical activity based on skeletal muscles that uses energy is considered to be intense exercise. Physical exercise includes all forms of movement, whether they are performed for fun, as a means of transit to and from destinations, or as part of work. Intense and moderate physical activity are both good for your health. The act of running, cycling, swimming, sports, physical recreation, and playing are all popular activities that everyone may undertake for enjoyment regardless of skill.

The following major elements, according to Martin (2010), were revealed by reviewing the research on "physical activity, fitness, and academic success" The overwhelming mostly of school-based, widely disseminated research in this area has discovered a beneficial relationship between kids' engagement in physical exercise and academic success. Caspersen's definition was somewhat modified I n 2017 for the World Health Organization's (WHO) Global Strategy on Increasing Physical Activity. The WHO refers to a bodily movement that "requires energy spending" as opposed to activity that uses up energy.

Thomas, Nelson and Silverman (2015). Regular physical activity, such as riding a bike, participating in sports, or taking part in active leisure, has a favourable effect on wellbeing. It is better to exercise some than none.

Physical Exercise Categories

Aerobic exercise, bone and muscle repairing, stretching, and strengthening bones are among the five basic categories of physical activity.

Aerobic Exercise

Tinazci, EAlrefai and Musa (2019), Your legs and arms, as well as other big muscles, are moved during aerobic exercise. Aerobic exercise includes things like running, swimming, walking, biking, dancing, and performing jumping jacks. The term "endurance activity" also applies to aerobic exercise. According to Tomporowski, Davis, Miller and Naglieri, (2008), Your heart beats more quickly during aerobic exercise. Furthermore, this kind of exercise makes you breathe more heavily. Regular aerobic exercise strengthens and improves the function of both your lungs and your heart over time.

Muscles-strengthening

According to the American College of Sports Medicine 2019, Exercise for muscle development is a voluntary endeavor that uses resistance bands, machines for weightlifting, hand-held dumbbells, or the weight of one's own body (such as push-ups or sit-ups). Troiano, Berrigan and Dodd (2017) described that, the developing field of musclestrengthening exercise epidemiology is described in this current point of view. The worldwide physical activity recommendations, which previously prioritized aerobic physical activity (running, jogging, playing indoor games, etc.), have recently included a muscle-strengthening exercise to their list of recommended activities. First, we define this term and examine this inclusion.

Presses with a standing dumbbell above

Thomas, J. R., Nelson, J. K., & Silverman, S. J. (2015), Compound workouts, which employ several muscles and joints, are the best type of exercise for those with busy schedules since they work on different areas of the body simultaneously. Freestanding overhead presses, which also strengthen your upper back as well as your core, are one of the best exercises for shoulders.

Material and Methods

This research is based on male colleges of northern Punjab. There is total 112 male colleges in the northern Punjab from which 21 colleges were selected according to equal proportion from each district. Data were gathered from physical education department of each college. The equal sample size of performer and non-participant (Ten students) were selected from each physical education department.

TABLE.NO:01: TOATAL AND SELECTED NUMBER OF MALES' COLLEGES

Division	Districts	Total male colleges	Selected male colleges
Lahore	Lahore	18	3
	Shekhapura	6	1
Sargodha	Sargodha	15	3
	Mianwali	6	1
Sahiwal	Okara	7	1
	Pakptan	3	1
Rawalpindi	Rawalpindi	21	4
	Jehlum	6	1
Gujranwala	Sialkot	8	1
	Narowal	3	1
Faisaabad	Faisalabad	15	3
	Chinnot	4	1
Total		112	21

Sample Size

This study is based Bachelors in Art (B.A) and Bachelors in Science (Bsc) colleges were considered. 21 Male' colleges were selected. 210 participators and 210 non-participators of physical education students at college level. The difficulty and complexities to the respondents were removed, prior to actual data collection. Ten participators and ten non- participators were selected from each college.

Variables

The physical activities have various shapes in modern world. In the research four physical activities were selected like speed, general endurance, flexibility and power. The measurement for all activities were performed and their data were collected. Those tests tool and units are given below

TABLE.NO;01: TOOLS AND UNITS OF THE VARIABLES

Test	Tool	Unit
Speed	200 m Running	Second
General endurance	Jogging	Feet
Flexibility	Sit & reach box	Centimeter
Power	Standing Long Jump	Feet

Statistical analysis

Present study had utilized the descriptive as well as inferential statistics. The box and whisker plots are applied for outliers' detection and normality test is supported with histogram. T-test was used for the comparison of physical activities data of participators and non- participators. The data was analysed by using the (SPSS-23 version).

Results and discussion

TABLE.NO:02: AGE OF THE PARTICIPATORS

Age	Male			
	Participators		Non-Participators	
	F	%	f	%
>20 Years	40	19.047	41	19.523
21-25 Years	164	78.095	162	77.142
26-30 Years	6	2.857	4	1.904
30- Above Years	0	0	3	1.428
Total	210	100.0	210	100.0

Table 02 shows that 19.047% of participators and 19.523% non-participators age was less 20 years, 78.095% of participators and 77.142% non-participators age was 21-25 years, 2.857% of participators and 1.904% non-participators age was 25-30 years, 0.0% of participators and 1.428% non-participators age was less 30-above years.

TABLE.NO:03: SOCIOECONOMICS CLASS

	Male			
Option	Participators		Non-Participators	
	F	%	F	%
Lower	7	3.333	9	4.285
Lower Middle	21	10.0	19	9.047
Middle	118	56.190	116	55.238
Upper Middle	49	23.333	43	20.476
Upper	15	7.142	21	10.0
Total	210	100.0	210	100.0

Table 03 shows that 3.333% of participators and 14.285% non-participators socioeconomic class was lower, 10.0% of participators and 9.047% non-participators socioeconomic class was lower middle, 56.190% of participators and 55.238% non-participators socioeconomic class was middle, 23.333% of Male participators and 20.476% non-participators socioeconomic class was upper middle, 7.142% of participators and 10.0% non-participators socioeconomic class was upper.

TABLE.NO: 04: PARTICULAR GAME PARTICIPATION

	Male			
Option	Participators		Non-Participators	
	F	%	F	%
Cricket	73	34.761	52	24.761
Football	55	26.190	22	10.476
Badminton	31	14.761	35	16.666
Other	51	24.285	101	48.095
Total	210	100.0	210	100.0

Table 4.10 Shows that 34.761% of participators and 24.761% non-participators particular game was Cricket, 26.190% of participators and 10.476% non-participators particular game was Football, 14.761% of participators and 16.666% non-participators particular game was Badminton, 24.285% of participators and 48.095% non-participators particular game was other.

TABLE.NO: 05: GROUP STATISTICS

Group Statistics					
	Type	N	Mean	Std. Deviation	Std. Error Mean
Speed	Participators	210	22.0381	4.83097	.33337
	Non-participators	210	33.6190	10.62396	.73312
Eendurance	Participators	210	69.2524	18.75728	1.29438
	Non-participators	210	72.1714	18.76853	1.29515
Flexibility	Participators	210	3.2969	.61334	.04232
	Non-participators	210	3.0031	.54623	.03769
Power	Participators	210	3.6969	.56280	.03884
	Non-participators	210	3.4767	2.50729	.17302

Table 05 indicates that the total number of participators and non-participators was 210, the mean speed was 22.0381 seconds with slandered deviation 4.83097 seconds for participators and 33.6190 with 10.62396 seconds. The average general endurance 69.25.24 feet with standard deviation 18.75725 feet for participators and 72.1714 feet with standard deviation 18.76853 feet for non-participators was recorded. The mean3.2969 centimeter with standard deviation 0.61334 centimeter for participators and mean 3.0031 centimeter with standard deviation 0.54623 was achieved for flexibility. The average 3.6969 feet with 0.56280 feet standard deviation for participators and mean 3.4767 feet with standard deviation 2.5029 was obtained for power.

TABLE.NO:06: INDEPENDENT SAMPLES TEST

Independent Samples Test							
	t	Df	Sig	Mean difference	Std.Error	95% Confidence Interval of the Difference	
						Upper	Lower
Speed	-14.380	418	0.000	-11.58095	.80536	-13.16401	-9.99789
Endurance	-1.594	418.000	0.112	-2.91905	1.83107	-6.51830	.68021
Flexibility	5.184	412.510	0.000	.29381	.05668	.18240	.40522
Power	1.242	418.000	0.216	.22019	.17732	-.12920	.56958

Table no 06 describes that speed has t-test value -14.380 with degree of freedom 418. Its p-value is 0.000 indicating the significant difference in the speed of participators and non-participators. T-test value for general endurance is -1.594 along with degrees of freedom value 412.510, its p-value is 0.115 that is greater than specified level of significance value (0.05) indicating the no significant difference in the means of general endurance for participators and non-participators. Flexibility has the t-test value 5.184 with degrees of freedom 412.510, p-value 0.000 shows the significant difference in the mean flexibility of participators and non-participators. The power posses the t-value 1.242 along 418 degrees of freedom, its p-value is 0.216 implies that there is no difference between the means of the power of the participators and non-participators.

Conclusion

The study is conducted to test the levels of performing physical activities between the participators and non-participators of male students of physical education department. This research revealed that the speed level was not same for the both groups the speed of the participators was better than the non-participators.it is also determined the general endurance level for participators and non-participators was same, there was not a good difference in the general endurance for the both groups. The flexibility level of the participators was extremely better than non-participators. Participators were found efficient as compare to non-participators. Power of the both groups was not different, their power strength was same. Sports participation reported in a positive relationship with health and academic achievement. Sports participation may improve cognitive health leading to improved academic achievement. Previous studies have provided evidence that sports participation has a positive association with cognitive and physical health. This stud has examined the relationship between the sports and academic achievement.

Recommendations

Many future studies are recommended based on this study's limitations and findings. For instance, a qualitative study is recommended to profoundly understand the physical activity phenomenon among academic achievement. The qualitative part is essential in addition to the quantitative section. Future qualitative studies that focus on understanding the weak association between attitude and subjective norms with intention toward physical activity are also recommended. Furthermore, conducting this

study at an international level to compare different Physical activity & sports would be beneficial to a better understanding of this phenomenon.

References

1. Andersen, M. P., Starkopf, L., Sessa, M., Mortensen, R. N., Vardinghus-Nielsen, H., Bøggild, H., ... & Torp-Pedersen, C. (2017). The indirect and direct pathways between physical fitness and academic achievement on commencement in post-compulsory education in a historical cohort of Danish school youth. BMC public health, 17(1), 1-10.
2. Bartholomew, J. B., Morrison, D., &Ciccolo, J. T. (2005). Effects of acute exercise on mood and well-being in patients with major depressive disorder. Medicine and science in sports and exercise, 37(12), 2032.
3. Caspersen, C.J., Powell, K.E., & Christenson, C.M. (1985). Physical activity, exercise, and physical fitness: Definitions and distinctions for health related research. Public Health Reports, 100(2), 126-131.
4. Castelli DM, Hillman CH, Buck SM, Erwin HE. (2007) Physical fitness and academic achievement in third and fifth-grade students. J Sport Exerc Psychol, 29(2),239-252.
5. Cawley, J., Meyerhoefer, C., & Newhouse, D. (2007). The impact of state physical education requirements on youth physical activity and overweight. Health Economics, 16(12), 1287- 1301.
6. Chacón-Cuberos, R., Castro-Sánchez, M., Pérez-Turpin, J. A., Olmedo-Moreno, E. M., & Zurita Ortega, F. (2019). Levels of physical activity are associated with the motivational climate and resilience in university students of physical education from Andalucía: an explanatory model. Frontiers in psychology, 10, 1821.
7. Chaddock-Heyman L, Erikson KL, Voss Mw, Knecht AM, Pontifex MB, Castelli DM, Hillman CH, Kramer AF (2013). The effects of physical activity on functional MRI activation associated with cognitive control in children: a randomized controlled intervention. Front Hum Neurosci. 7, 72. doi: 10.3389/fnhum.2013.00072.
8. Chen, W., & Harklau, L. (2017). Athletics and academic achievement in Latino youth: acautionary tale. Anthropology & Education Quarterly, 48(2), 176-193. https://doi.org./10.1111/aeq.12192
9. Choi, S. M., Sum, K. W. R., Leung, F. L. E., Ha, S. C. A., Sit, C., & Yeung, K. H. (2021). Predictors of physical activity levels in university physical education implementing sport education. Journal of Sports Science & Medicine, 20(3), 516.
10. Chomitz VR, Slinging MM, McGowan RJ, Mitchell SE, Dawson GF, Hacker KA (2007). Is there a relationship between physical fitness and academic achievement? Positive results from public school children in the Northeastern United States. J Sch Health. 79(1), 30-7.
11. Eynon, N., Ruiz, J. R., Oliveira, J., Duarte, J. A., Birk, R., & Lucia, A. (2011). Genes and elite athletes: a roadmap for future research. The Journal of physiology, 589(13), 3063-3070.
12. Han, G. S. (2018). The relationship between physical fitness and academic achievement among adolescent in South Korea. Journal of physical therapy science, 30(4), 605-608.
13. Mitchell, A., Gottfried, J., Stocking, G., Walker, M., &Fedeli, S. (2019). Many Americans say made-up news is a critical problem that needs to be fixed. Pew Research Center.
14. Tinazci, C., EAlrefai, S., & Musa, O. (2019). Patterns of physical activity of Libyan undergraduate students at the university of Tripoli using international physical activity questionnaire (IPAQ). Sport Mont, 17(2), 103-106.
15. Tomporowski, P. D., Davis, C. L., Miller, P. H., & Naglieri, J. A. (2008). Exercise and children's intelligence, cognition, and academic achievement. Educational psychology review, 20(2), 111-131.
16. Troiano RP, Berrigan D, Dodd KW, Masse LC, Tilert T, McDowell M. (2008). Physical activity in the United States measured by accelerometer. Med SCI Sports Exerc 40(1), 181-188.
17. Trudeau, F., & Shephard, R. J. (2008). Physical education, school physical activity, school sports and academic performance. International journal of behavioral nutrition and physical activity, 5(1), 1- 12.

18. Turner, E. O., &Mangual Figueroa, A. (2019). Immigration policy and education in lived reality: A framework for researchers and educators. Educational Researcher, 48(8), 549- 557.
19. Turner, E. O., &Mangual Figueroa, A. (2019). Immigration policy and education in lived reality: A framework for researchers and educators. Educational Researcher, 48(8), 549- 557.
20. Vučić A, Bilić-Kirin V. (2020). The Impact of Physical Activity and Sports on Academic Achievement of Students in Primary and Secondary Schools in Osijek-Baranja County, Croatia. SEEMEDJ 4(2); 97-107).
21. White, T. (2018). Teachers of color and urban charter schools: Race, school culture, and teacher turnover in the charter sector. Journal of Transformative Leadership & Policy Studies, 7(1), 27-42.