

RESEARCH ARTICLE

COMPARISON OF PERCEIVED BENEFITS AND BARRIERS TO EXERCISE AMONG MEDICAL AND NON-MEDICAL STUDENTS

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ABSTRACT

Background: Perceptions of exercise benefits and barriers in medical and non-medical students needs to be explored as it is expected that medical students have more awareness regarding physical activities. **Objective:** To compare the perception of exercise benefits and barriers among medical and non-medical students. **Methodology:** This comparative cross-sectional study was conducted in 6 months from November 2020 to April 2020, on sample of n=289 regular male and female students in the age range of 19-27 years. The data of final year medical students was collected from Azra Naheed Medical College and nonmedical students from Superior University, Lahore Through on probability convenient sampling technique. The perception of exercise benefits and barriers was assessed using the exercise benefit/barrier scale (EBBS). The data was carried out by an online Google form due to the pandemic situation. The independent sample t-test was used to estimate of difference among both groups. **Results:** The mean age of the participants was 23.75±2.11 years. A total of n=164(56.74%) were males and n=125 (43.25%) were females. The result of independent t-test showed no significant difference between medical and non-medical students regarding exercise benefit (91.2±11.66 ver. 91.09±12.83, p=0.93) and barriers (34.97±7.22 ver. 35.27±7.62, p=0.72) as well in total score of EBBS (126.23±14.450 ver. 125.81±16.390, p=0.810). **Conclusion:** It is concluded that medical and non-medical final year students are equally aware about exercise benefits and barriers.

Keywords: Benefits, barriers, exercise, medical students, non-medical students, physical activity, perception

INTRODUCTION

Physical activity (PA) is the combination of voluntary movements along with consumption of the body energy¹. PA increases the bone density, muscular mass and neuromuscular activation, therefore showing quick and long-term benefits for the physical, social and psychological wellbeing of an individual². On other hand, prevalence of obesity has increased substantially over the past 40 years, from less than 1% in 1975, to 6-8% in 2016 as more obesity demands more physical activity³. High cholesterol level is contributing in high level of heart diseases in adulthood⁴. Physical inactivity is considered the 4th leading risk factor accounting for 6% of the global mortality rate⁵. Physical inactivity, poor diet; poor cardiorespiratory fitness⁶ and high content of body fat are the risk factors for CVD⁷.

The recommended guidelines from the WHO indicate that adults ranging from 18-64 years old should engage in the exercises of moderate-intensity five days per week for at least 30 minutes to enhance their muscular strength and cardiopulmonary fitness to lower the risk of all the non-communicable diseases⁸. Many authors have

reported positive relationship between academic performance and physical fitness^{9,10}.

It is an ethical duty of medical students to tell their clients about suitable exercises and their attitude toward exercise because there is an assumption that medical students being health care professionals have a greater knowledge of exercise and its advantages compared to non-medical¹¹. It is stated that there is vast difference of knowledge and understanding in medical students about the application and advantages of PA in their life¹². The students had different perceptions about exercise benefits and barriers faced by them. The reported barriers were less free time and a high workload of studies resulting in reduced PA levels in medical students¹³. Levels of physical activity were found quite higher in American medical students following PA recommendations in guidelines Physical therapy students have high physical activity compared to medical students because they followed the ACSM guidelines for PA. The reason is their university modules offered sports and leisure time activities¹⁴. But contrary findings were seen in another study that PA levels were lower in PT students when compared the physical education students¹⁵. Another study also stated

that physiotherapy students have good perception about their BMI¹⁶. but students from the rural background were fit compared to urban^{17,18}.

The perception of medical students in the promotion of PA is still unknown and PA levels of medical students are different because they took their classes differently accordingly to their syllabus¹⁹. So, PA levels and the perceptions about exercise benefits and barriers in medical and non-medical students need to be explored. The objective of the study was to compare the perception of medical and non-medical students regarding exercise benefits and barriers.

METHODOLOGY

It was a comparative cross-sectional study conducted on n=289 (Male 164 and female 125) medical and non-medical students 51.56% were medical and 48.44% non-medical students. Azra Naheed Medical College and Superior University Lahore respectively after Ethical permission from Research Ethical Committee (REC) of Azra Naheed Center of Research and Development (ANCRD) SU/ANCRD/IERC/57. The Sample n=289 calculated based on the formula, $z_{1-\alpha/2} P/(1-P) / d_2$, where , $Z_{1-\alpha/2} = 1.96$ (Standard normal variants at 5% type I error ($p < 0.05$)), $P = 0.79$ (Expected proportion in population and $d = 0.05$ (absolute error)²⁰.

The undergraduate students in the age range of 19-27 years both genders and final professional year regular students studying full time at the university campus were included. The students with any serious illness, musculoskeletal disorders, injury in the last 06 months, physical disability, and hereditary disease along with any physical activity or exercise contraindicated were excluded. The participants were selected using a non-probability convenient sampling technique in two categories: one was the medical undergraduate students of DPT MBBS, BDS, MLT, and MIT from Azra Naheed Medical College and nonmedical students from Engineering, Aviation, BBA, Architecture, Mass Com, BS-CS) from Superior University, Lahore.

The data was collected from the study participants through online google forms. The outcome was measured using the 43 items Exercise benefit and barrier scale (EBBS). The beneficial components comprised of 29 questions and the barrier component has 14 questions. It has a validity

coefficient of 0.879 as a whole and 0.95 for benefit and 0.80 for the barrier section. The scale responses were on 4 point Likert scale ranging from 4 (strongly agree) to 1 (strongly disagreed). The scoring of barrier scale is reversed. The total score of scale is ranged from 43 to 172. If Benefits Scale is used alone, the score range is between 29 and 116. While Barriers Scale is used alone, scores range from 14 to 56 and does not need reverse scoring. The higher the score on scale, the more positively the individual perceives exercise²¹.

Before data collection each participant submitted written informed consent. The researcher the adhered to ethical and legal norms and standards according to Declaration of Helsinki as a statement of ethical principles

The data was presented in the form of mean±Sd and n(%). As the data was normally distributed, the independent t test was applied to compare the medical and non-medical students. The SPSS 22 Version was used for the statistical analysis and level of significance was set at $p < 0.05$.

RESULTS

The mean age of the participants was 23.75 ± 2.11 years. A total of n=149 (51.56%) were medical and n=140 (48.44%) non-medical students. (Table 1) The frequency of gender was n=164(56.74%) were males and n=125(43.25%) were females. The frequency distribution of BMI can be seen in Figure 1.

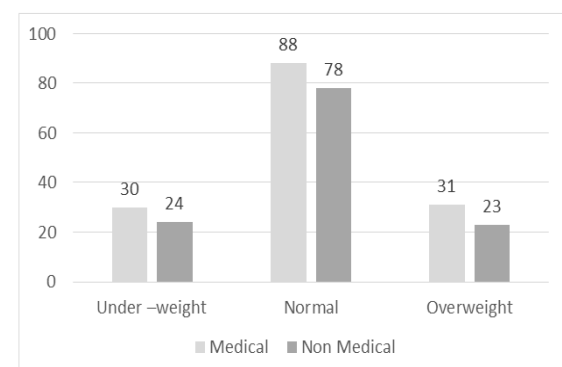


Figure 1: BMI frequency distribution

The result of independent t-test showed no significant difference between medical and non-medical students regarding exercise benefit (91.2 ± 11.66 ver. 91.09 ± 12.83 , $p = 0.93$) and barriers (34.97 ± 7.22 ver. 35.27 ± 7.62 , $p = 0.72$) as well in total score of EBBS (126.23 ± 14.450 ver. 125.81 ± 16.390 , $p = 0.810$). (Figure 1)

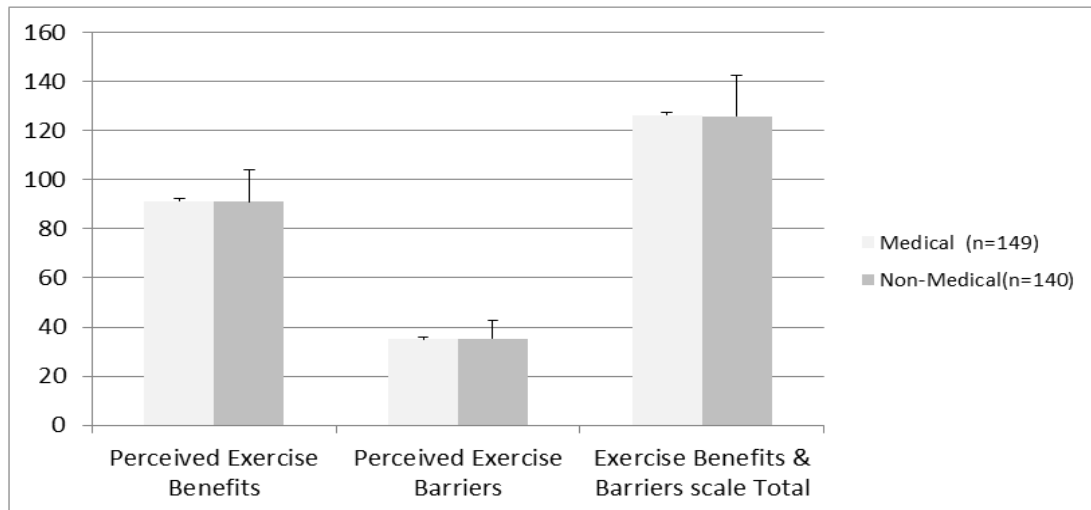


Figure 2: Comparison between Medical and Non-Medical Regarding Perceived Exercise Benefits and Barriers

DISCUSSION

The objective of study was to compare the medical and non-medical undergraduate student regarding the perception of exercises benefit and barriers. The results indicated that both have the same perception about the exercises benefit and barriers. This cross-sectional study was conducted in Lahore using the exercise benefit/barrier scale (EBBS) as an outcome measure. Medical students have a slightly higher score on the exercise benefits scale than non-medical students but with no significant difference at $p=0.93$. This study indicates that medical students have positive attitude about exercise than non-medical students. The Physical inactivity is the leading risk factor and has long-term effects on the physical, social, and psychological well-being of an individual²². As per knowing this fact, the above study result was compared with the current study and revealed that many medical students had faced a barrier to exercise due to their busy routines. However, according to literature, more than half of medical students are physically inactive due busy academic schedule and lack of proper facilities. This result can be compared 41.1 % Saudi medical students were physically inactive but only 15.4% of Egyptian medical students were inactive²³. When these results were compared with a current study,, exhibited that many medical students show a positive trend towards exercise they were not as inactive as the data of sudia medical student was reported. Similarly, Fourth-year medical students at

the University of British Columbia participate in more strenuous physical exercise than the average age-matched Canadian students , which impacts their expectations of potential of clinical practices²⁴. This study finding had consistency with the current study because medical students had potential benefits and a positive attitude towards exercise.

The exercise was perceived to benefits on their health, with medical students finding additional stress-relieving benefits. The most significant obstacles to exercise were lack of time, facilities with inconvenient schedules and exercise not integrating into research or placement schedules. In this current study non -medical students considered lack of exercise place, exercise work out, lack of support from family and peers, exercise fatigue and sparing time were considered as barrier to exercise more than medical students. But these findings are inconsistent with Saudi students because they had good perception benefits of exercise but cultural differences, lack of facilities and time were also barriers for them²⁵.

Nursing students were less involved than medical students, citing fewer advantages and more obstacles to exercise, as well as a lack of social support for physical activity, Current study lack the analysis regarding program wise perception of exercise benefits and barriers. Self-efficacy and social reinforcement were the best predictors of physical activity in nursing and medicine students, accounting for 35% of the variance¹¹. The students considered tiredness, fatigue, and time spent

keeping away from their families as exercise barriers. The mostly reported barriers are pain, musculoskeletal disorders, physical exertion, and fatigue, but there was no association between barriers and a sedentary lifestyle²⁶.

In this study 51 (34.22%) medical and 61 (43.57%), non-medical students considered cost as a barrier to their exercise. Interestingly among Jordanian teenagers, more than half of medical and non-medical students were taking fatigue as a barrier while Lack of physical activity skills, easy availability and low cost of fast food, and a lack of peers and friends were all highlighted as social and personal barriers to exercise²⁷. The current study found that medical students of had a good attitude toward exercise as compared to non-medical professionals but not significantly different. The health-promoting behaviors did not affect their physical activity and female students of medical were found less active at this institute inconsistent with the findings of undergraduate Saudi students²⁸. The limitation of this study was the population, which was selected from only one university due to pandemic lockdown and it does not represent the whole country. The second limitation was online data collection because the university was closed due to the pandemics.

CONCLUSION

The perception about exercise benefits and barriers were high in both medical and non-medical students without any significant difference. The medical and non-medical students both positively perceived the exercise benefits and barriers equally. The reasons may be easily accessible information regarding the exercise benefits that could lead to focus on a comprehensive management of obese adolescent girls.

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