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The effect of socio-economic status on the effective students' participation in physical activity: A cross sectional study from Ras Alkhaimah Medical and Health Sciences University-UAE

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Abstract

The socio-economic status make-up of an individual Influences habitual physical activity and plays an important role in one's achievements in every field of life, including performance in sports. The current study aimed to assess the effect of socio-economic status determined by parental education and family income on the effective students' participation in physical activity sessions at RAK Medical& Health Sciences University. The study demonstrated significant positive correlation between physical activity levels of the students and mother education ($r=0.139, p=0.05$) and family income ($r = 0.182, p= 0.01$), while father education had no significant effect on the level of students' physical activity ($r =0.030, p=0.676$). Conversely, a significant negative correlation was noted between the physical activity levels of the students and number of family members ($r = -0.130, p= 0.068$). The study also revealed that the majority (114/198, 52%) of students were in the medium socio-economic status category. In addition, students with low socio-economic status were more likely to display low physical activity whereas students with high socio-economic status were more likely to display high physical activity.

Keywords: university students, sports, medical university, socio-economic, physical activity.

Introduction

Physical education has historically been considered an integral and essential part for promoting a range of benefits including general health, cognitive, development, motor skills and social behavior [1, 2]. The philosophy "Healthy Body, Healthy Mind" has promoted the inclusion of physical education alongside with the curriculum subjects. Physical education is the systematic education to develop a man physically, mentally, emotionally and socially through the medium of physical activities. Physical activity is defined as any bodily movement produced by skeletal muscles that require energy expenditure. The term "Physical activity" should not be mistaken with "exercise". Exercise is a subcategory of physical activity that is planned, structured, repetitive, and purposeful [3].

Although international guidelines have been developed to specify the minimum amount of daily physical activity required for the healthy growth and development of individual and youth, research has shown that the majority of them are not achieving the recommended levels [4].

Previous studies revealed that the socio-economic status make-up of an individual Influences habitual physical activity and plays an important role in their achievements in every field of life, including performance in sports [5]. Socio-economic status (SES) is an economic and sociological combined total measure of a person's work experience and of an individual's or family's economic and social position in relation to others, based on income, education, and occupation [6].

Socio-economic status of an individual may influence his opportunity, his desire to excel, his choice of activity and his success. Considerable research has been conducted on the socio-economic status of sports persons, team sport versus individual sport [7, 8, 9]. It was also reported that low SES teens were less physically active than high socio-economic teens. University level students of low SES opt for less expensive sports and students of high SES opt for

expensive sports. In all societies, it is people in high income, high education, and high status occupational groups that have the highest rates of active sports participation, attendance at sports events, and even watching of sports on television^[10].

Some studies have also found links between parental and household characteristics and children’s physical activity level. For example, results from the 2011-2014 CANPLAY study indicate that individual and youth living in higher income households or who participate in organized physical activity and sport are more active compared to those living in lower income households or those who do not participate in organized activities^[11].

In continuation of our previous research on the impact of physical activity on the academic performance (Elmagd *et al.*, 2015)^[12] and self-esteem (Elmagd *et al.*, 2015)^[13] of students of Ras Al Khaimah Medical and Health University, the current study was undertaken to assess the effect of socio-economic status determined by parental education and occupation and family income on the effective students’ participation in physical activity sessions at RAK Medical & Health Sciences University

Methods

A questionnaire-based study was conducted in RAK Medical and Health Sciences University - Ras Alkaimah – UAE from the period of October 2014 to December 2014 after obtaining the ethical approval from the University Research and Ethics Committee. The study aimed to include participants from both genders in the four constituent colleges; Medical, Dental, Pharmacy and Nursing. The questionnaire was online based including socio-demographic data about students’ age, gender, ethnicity and residency. Four indicators were used to characterize the socio-economic status: Father’s education, Mother’s education, Family size and Family income, the indicators were rated on a 5-point Likert scale except the family income which was rated on a 4- point Likert scale as follows, Parents’ education (1= Less than high school, 5=Postgraduate), family size (1= 0-2, 5= more than five), and family income (1=25000\$, 4=>75000\$). The questionnaire also included graded evaluation of the students’ physical activities and academic performance during the academic year (2013-2014). The sports participation claimed by the students was crosschecked with the sports officer records. The questionnaire was constructed with reference to similar previous studies and according to the recommendation of World Health Organization (WHO)^[14]. Finally, administrative and academic faculty validated the questionnaire. The incomplete entries were excluded then the data were collected in a worksheet and analyzed statistically using the SPSS software (IBM SPSS version 19).

Results

The total number of participants was 198 with 65 male students (33%) and 133 females (67%). There was equal number of Medical and Dental students (57 each) while Pharmacy and Nursing students constituted 46 and 38 respectively. The students’ age ranged from below 18 years to above 24 years with majority (56%) in the age range (18-20 years) followed by (35%) in the range (20-22 years old). The students came from different nationalities as there were 49% from the Middle East, 36% Asians, 12% Africans and 3.5% Americans. The sports, which showed more participation, were walking, jogging, running, and dancing. As shown in Table 1, less than 40% of our students met the WHO recommended duration of physical activity per week (150 minutes or more per week).

Table 1: The distribution of the physical activity categories of the participants

Level of physical activity	Frequency	(%)
< 30 minutes per week	17	8.6
31- 59 minutes per week	47	23.7
60–89 minutes per week	57	28.8
90–150 minutes per week	37	18.7
> 150 minutes per week	40	20.2
Total	198	100.0

Higher physical activity levels were more predominantly reported among male students (Fig 1). On the other hand, the nationality of the participants did not affect the level of physical activity, as there were no significant differences in their means among the different nationalities.

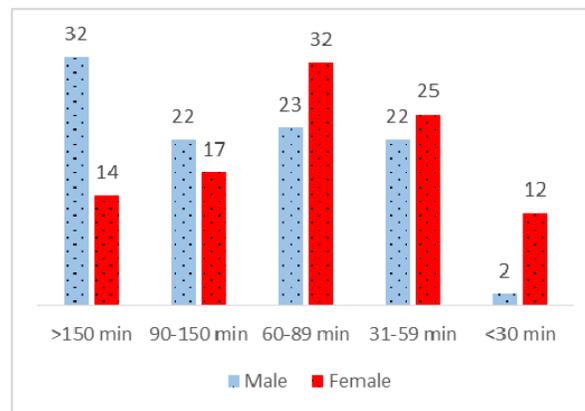


Fig 1: Percentage of physical activity levels gender-wise

With reference to (Fig 2), it can be noticed clearly that most of the MBBS students fall in the high physical activity levels while most of BDS students fall in the low physical activity levels.

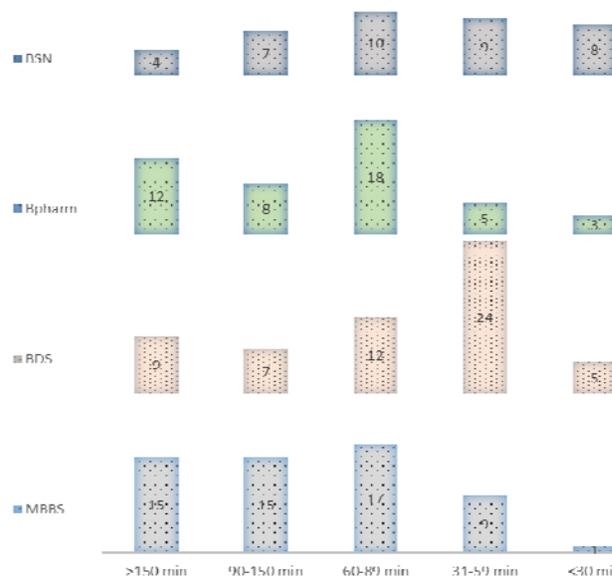


Fig 2: Frequency of Physical activity levels college-wise

Based on the average duration of physical activity, the students were categorized into low (<47), medium (<74) and high physical activity (>74) groups. Collectively, 77 (39%) students were in the low physical activity group, 57 (29%) in the medium physical activity group, while 64 (32%) were in the

high physical activity group.

The majority of students surveyed had fathers and mothers with university degree education (52.02% and 31.82%, respectively). Over 90% (179/198) had parents with paid employment. Only 13.64% of the students in this study were from high income households (more than 75000\$ annually) whereas 42.42% of them reported average income households (from 25000 to 50000\$ annually). Moreover, 53.03% of the students had relatively big families (more than 5 members). (Fig 3&4)

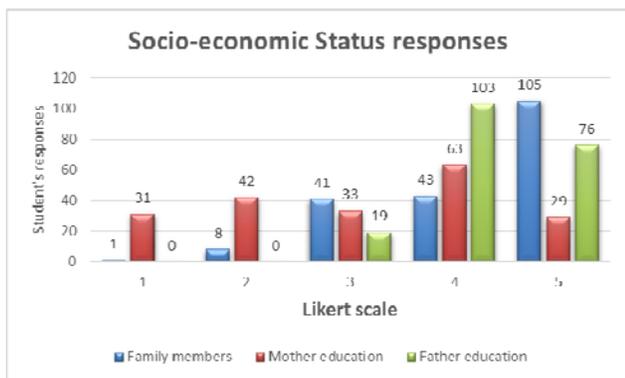


Fig 3: students’ responses on SES indicators

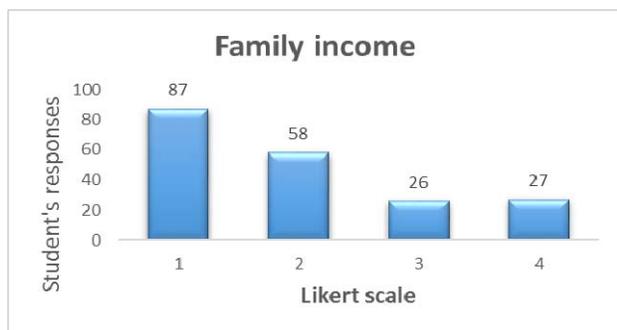


Fig 4: students’ responses on family income

Further analysis revealed significant positive correlation between physical activity levels of the students and SES indicators, specifically, mother education ($r=0.139, p=0.05$) and family income ($r = 0.182, p= 0.01$), while father education had no significant effect on the level of students’ physical activity ($r =0.030, p=0.676$). In addition, a significant negative correlation was noted between the physical activity levels of the students and number of family members ($r = -0.130, p= 0.068$) (Table 2)

Table 2: Correlation between socio-economic indicators and students’ physical activity levels

Rank	Socio-economic Indicator	PHYSICAL CTIVITY(r)
1	Family Income	0.182**
2	Mother Education	0.139*
3	Father Education	0.030 ns
4	Family Members	-0.130

** Correlation is significant at the 0.01 level of probability.
 * Correlation is significant at the 0.05 level of probability.
 ns Not significant at both levels.

To further analyze the relationship between students’ SES and their physical activity, we calculated the average of the Likert scales of all SES indicators out of 100, which was then used to categorize SES into low: < 51; Medium: 51-71, and high: >

71. The majority (114/198, 52%) of students were in the medium SES while 52 (28%) and 32 (16%) were in the high and low SES, respectively.

As illustrated in (Fig 4), the majority (20/32) of students with low SES were less likely to participate in PA, also the majority (44/114) of students with medium SES were of the low PA group. Of note, 22/ 52 students with high SES were more likely to participate actively in PA.

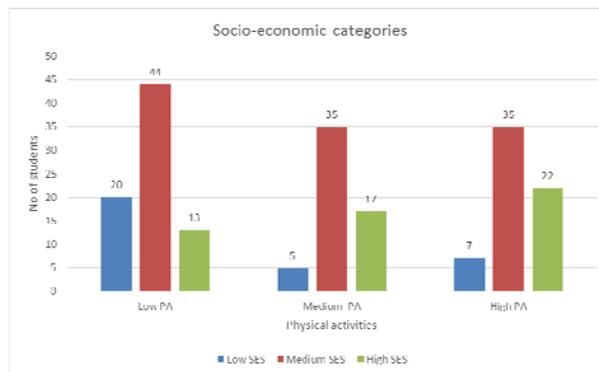


Fig 4: The student’s Physical activities among the Socio-economic categories

Discussion

Socio-economic status is an individual’s or group’s position within a hierarchical social structure. Socio-economic status depends on a combination of variables, including occupation, education, income, wealth and place of residence [15]. Many psychological factors like socio-economic status, attitudes, motives, spectators, self-concept, motivation and adjustment, influence the participation and performance of sportsmen in games and sports [16, 17, 18].

The current study showed that the majority of our cohort comes from families with parents holding university degree. As demonstrated in previous studies higher levels of education are associated with better economic and psychological outcomes (i.e. more income, more control, and greater social support and networking) [19].

Interestingly, the correlation with the level of students’ physical activity was significantly stronger for maternal education than for paternal education in our study. Some recent studies reported a positive association between physical activity and high parental education [20, 21]. On the other hand, some other studies reported that the educational level of both fathers and mothers had no significant influences on levels of adolescent PA [22]. In another study, participants whose fathers did not have a high school degree reported shorter duration of sports involvement than those whose fathers had achieved a high school degree or above [23].

Consistent with previous studies, the present study revealed a significant positive correlation between students’ physical activity and family income, whereas a significant negative correlation between students’ physical activity and number of family members was noted. Sharma and Hardikar (2010) reported that income reflects the level of living of a family [24]. Specifically, there is no doubt that type, amount and timing of food can dramatically affect sport performance [25].

Moreover, one study showed that 51% of two-parent households with children spent money on sports and athletic equipment. Those who made such expenditures spent an average of \$579 during the year [26]. In addition to these equipment expenses, families may also spend money on facility rentals, transportation to sports events, club

memberships and competition entry fees in order to support their children's participation in sports.

In light of such costs, it is not surprising that sports participation was found to be most prevalent among individuals from high-income households (highest adjusted income quintile) at 68%, and lowest among individuals from lower income households (lowest quintile), at 44% [27].

Family structure can also influence the sports participation of individual, especially if there are two parents who can share the responsibility of facilitating their individual's sports participation [28]. The highest individual's sport participation rates (53%) occur in intact families where both birth parents are present

Socio-economic status is typically broken into three categories low (< 51), Medium (51-71) and high (> 71) to describe the three areas a family or an individual may fall into. When placing a family or individual into one of these categories, any or all of the three variables (income, education, and family members) can be assessed

With respect to the relation between students' physical activity and their socio-economic status, our study demonstrated that the majority of low SES students were of the low PA group. Moreover, 42.3% of high SES students were of the high PA group.

In accordance with our results, Wijtazes *et al* [29] noted associations between physical activity behaviors and SES. Specifically, they found that individuals with low SES were more likely to not participate in sports and to play outdoors for a short duration (<1 hour/day). Moreover, the association between SES and children's participation in sports was noted for all three indicators (parent's education and employment and household income). Also, Kelly *et al*. [30] concluded that low SES teens were less physically active than high socio-economic teens.

Furthermore, some authors have shown that the team games are strongly affected by the players' socio-economic status than the Individual games. While socioeconomic-status and psychological factors enhance the performance of football players to achieve their goal [31], socio-economic status did not have any effect on the performance of badminton players [32]. Interestingly, players of high socioeconomic status did not like to play Ice-Hockey, Golf and Tennis games [33].

Conclusion

The study demonstrated the effect of socio-economic status of a cohort of medical and health sciences students from Ras Al Khaimah on their physical activity. There was a significant positive correlation between physical activity levels of the students and mother education and family income. Conversely, a significant negative correlation was noted between the physical activity levels of the students and number of family members. In addition, students with low socio-economic status were more likely to display low physical activity whereas students with high socio-economic status were more likely to display high physical activity.

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