

Attitudes of Saudi Arabian Students at Different Academic Levels towards Physical Activity: An Objective Comparison

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Abstract

Background/Objectives: Physical inactivity prevalence in Saudi Arabia is high. This may be due to the attitude of Saudis toward physical activity. The objective of this study was to determine and compare attitudes towards physical activity of students of King Fahd University of Petroleum and Minerals campus. **Methods/Statistical Analysis:** Students from high school, orientation year and college level who enrolled in a physical education course participated in this study. A total of 896 out of 900 male students completed "The Attitude towards Physical Activity Scale" questionnaire using a 5-point Likert Scale. The questionnaire was adapted to fit the Saudi population. Descriptive statistics was used to get the mean per aspect. Kruskal-Wallis H Test was used to compare between the groups. **Findings:** The aspect valued most by both high school and orientation year students was "health and fitness", whereas "meeting a physical challenge" aspect was ranked highest by college students. High school students had positive attitudes in all aspects of physical activity, while orientation and college students had positive attitudes in two and three aspects respectively. Overall, the high school students had the most positive attitude toward physical activity ($P < 0.05$ vs. other student groups). This is one of the few studies which give a psychological view of what affects physical activity participation of Saudis. **Applications/Improvements:** Physical and health educators, university and public health committees can use these results to provide information, programs, and infrastructure for students to improve their attitudes towards physical activity.

Keywords: Attitudes, High School, Physical Activity, Saudi Arabia, University

1. Introduction

It is well-documented that an individual's attitude can determine whether that person will engage in certain activities¹. In addition, it is well-known that a positive attitude towards an object or activity results from positive preconceptions and beliefs, whereas a negative attitude results from negative preconceptions and beliefs². The Theory of Planned Behavior proposed by Ajzen³ states that a specific behavior can be predicted by an individual's intention. In turn, an individual's intention is based on that individual's attitude³. Therefore, according to the Theory of Planned Behavior, a positive attitude towards physical activity comes from a positive belief about physical activity, which subsequently increases regular

participation in physical activity. This relationship between attitude and physical activity participation has been verified successfully by Mummery, Spence and Huddec⁴, and Deforche, De Bourdeaudhuij and Tanghe⁵. Recently, it was shown by Back that positive attitudes towards physical education activities were positively correlated to psychological well-being⁶ and physical self-concept⁷. There is also some evidence to show that students with positive attitudes towards physical education activities are driven to achieve their physical activity goals⁸.

Regular physical activity has a role in preventing chronic diseases which are related to physical inactivity, such as cardiovascular disease, diabetes, cancer, hypertension, obesity and depression⁹. The strong relationship between physical activity and chronic disease

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prevention has led to specific exercise recommendations for different age groups¹⁰⁻¹². For children and adolescents (5-18 years), the recommendation is to participate in moderate intensity exercise for at least one hour every day^{10,11}. For adults (18-65 years) the recommendation is to perform moderate intensity exercise for at least 30 minutes, five days a week if they are healthy and have no medical contraindications¹². Despite these recommendations, it has been reported by Al-Zalabani, Al-Hamdan, and Saeed that 66.6% of the Saudi population are physically inactive¹³.

Given this important relationship between an individual's attitude to physical activity, their health behavior, and its effect on their long-term health, one way to counteract the high prevalence of physical inactivity among Saudi youth is to determine the attitudes of Saudi students towards physical activity. Understanding these attitudes will help school and public health committees design curricula and programs for each particular academic level with the goal of supporting positive attitudes and correcting negative attitudes towards physical activity, which will in turn affect health behavior in a positive manner. For this to be achieved, it is important to investigate attitudes towards physical activity on a nation-by-nation basis, and per academic level. This has been shown by Stelzer et al.¹⁴, who reported different attitudes towards physical activity among high school students from Austria, Czech Republic, United Kingdom and United States, and by Pethkar et al.¹⁵, who revealed different attitudes toward physical activity among middle school and high school students from 27 English taught schools in India.

To the author's knowledge, no investigation on the attitudes of Saudi students towards physical activity has been conducted. Therefore, the aim of this study was to identify the attitudes of male Saudi Arabian students toward physical activity for the purpose of helping Saudi physical educators and health professionals design curricula and health promotion campaigns, so that Saudi youth can increase their physical activity and ultimately improve their long-term health and productivity toward society. The investigation was limited to students of King Fahd University of Petroleum and Minerals (KFUPM) campus, and the attitudes of the students at each academic level were compared with each other.

2. Methods

2.1 Study Area

The study was performed on King Fahd University of Petroleum and Minerals (KFUPM) campus, located in the Eastern Province of Saudi Arabia. This campus is comprised of elementary school, middle school, high school and the university levels with both Saudi and foreign students. Most high school students of the KFUPM campus live in the Eastern Province. Orientation and college students are part of the university level, and they come from all the five provinces of Saudi Arabia. The top 3% of students from Saudi high schools are admitted into the orientation year, while the college students are those who passed their orientation year.

2.2 Sample Size and Characteristics

A number of 300 students each from high school, orientation year and college levels participated in the study. All the participants were male, and enrolled in a physical education course. The age ranges of the participants were as follows: 16 to 18 years for high school participants, 19 to 20 years for orientation year participants, and 21 to 23 years for college participants.

2.3 Study Design and Study Tools

The standardized Arabic version done by Alawi¹⁶ of the "Attitude Towards Physical Activity Scale" developed by Kenyon¹⁷, was administered to obtain empirical data on each subject's attitude toward physical activity. The questionnaire measures the attitude of students towards their engagement in physical activities. The Hoyt's reliability range for the original questionnaire is 0.72 to 0.89 when tested in the United States¹⁷. The reliability of the Arabic standardized questionnaire was 0.88 to 0.92 using the Test-Retest Reliability Coefficient¹⁶. This questionnaire has been used with Omani university students¹⁸. The validity of the questionnaire in Saudi Arabia was determined by ten professors.

The questionnaire was composed of 53 items, divided into six aspects. The aspects were "social experience", "health and fitness", "thrills and excitement" ("pursuit of vertigo"), "aesthetic experience", "recreation and relaxation" ("catharsis"), and "meeting a physical challenge" ("ascetic experience"). Each item was answered

with a 5-point Likert scale, with “1” representing “Strongly Disagree”, and “5” representing “Strongly Agree”.

2.4 Data Analysis

Descriptive statistics, ranking, and comparison between the levels were performed to evaluate the attitude of the participants. The overall mean point per item for each aspect was first calculated. A value of “1” represented a strong negative attitude, while a value of “5” represented a strong positive attitude. For all positive items, 1 point was given for answers with “Strongly Disagree”, and 5 points for answers with “Strongly Agree”. For negative items, 1 point was awarded for answers with “Strongly Agree”, and 5 points for answers with “Strongly Disagree”. Using the overall mean point per item, the participants’ attitude in each aspect was classified as follows: ≤ 1 for a “highly negative”, >1 to 2 for a “negative” attitude, > 2 to 3 for a “neutral” attitude, > 3 to 4 for a “positive” attitude, and > 4 to 5 for a “highly positive” attitude ¹⁹.

SPSS 16 was used to perform descriptive statistics and the comparison between the levels. Kruskal-Wallis H Test was used to compare between each of the groups of participants.

2.5 Ethical Considerations

Approval from the University, which is in compliance with the Declaration of Helsinki - Ethical Principles for Medical Research Involving Human Subjects, and written consent from the participants were obtained before the study was conducted.

3. Results

Out of the 900 students who filled the questionnaire, 896 students properly completed it; there were four invalid questionnaires. The final data were 297 high school students, 300 orientation students, and 299 college students.

Figure 1 shows the mean per item of each aspect of physical activity for each academic level, and Table 1 shows the comparison between one of the academic levels to each of the other academic levels in each aspect. High school participants of KFUPM campus had the most positive overall attitude towards physical activity in all the aspects. There were significant ($P < 0.05$) inter-group differences between high school vs. orientation year vs. college students in all six aspects, except for the “thrills

and excitement” aspect when comparing orientation year and college participants.

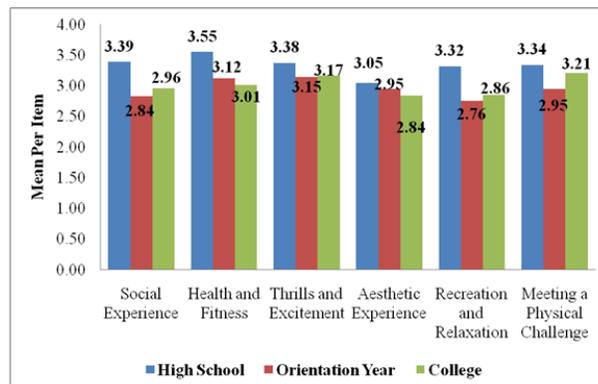


Figure 1. Overall mean per aspect.

Figure 2 shows the percentage of participants from each academic level with positive attitudes per aspect, and Table 2 shows the ranking of the six aspects of the questionnaire for each student grade level. The top two aspects with a positive attitude from high school participants were the “health and fitness”, and the “social experience” aspects, respectively. At the university level, the top two aspects with a positive attitude from the orientation year participants were the “health and fitness”, and the “thrills and excitement” aspects, while that for college participants were the “meeting a physical challenge”, and the “thrills and excitement” aspects.

High school participants showed positive attitudes in all aspects (mean point per item greater than 3), while orientation year participants and college participants showed neutral attitudes in four and three aspects respectively (mean point per item greater than 2 and less than 3).

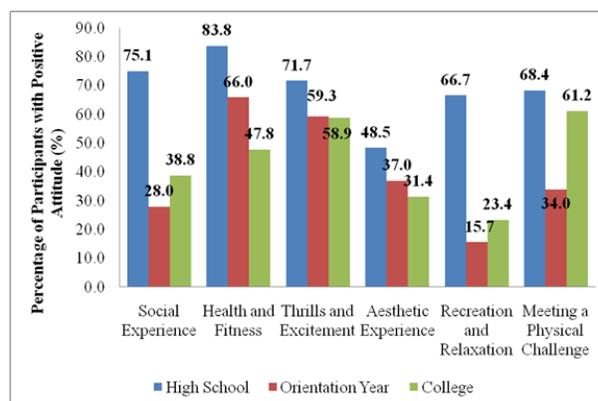


Figure 2. Percentage of participants with positive attitude.

Table 1. Comparison between high school, orientation year and college

Aspect	Mean per Item \pm SD			P Value		
	High School	Orientation year	College	High School vs Orientation year	Orientation year vs College	High School vs College
SE	3.39 \pm 0.56	2.84 \pm 0.44	2.96 \pm 0.33	$P < 0.001^*$	$P < 0.001^*$	$P < 0.001^*$
HF	3.55 \pm 0.56	3.12 \pm 0.35	3.01 \pm 0.36	$P < 0.001^*$	$P < 0.001^*$	$P < 0.001^*$
TE	3.38 \pm 0.53	3.15 \pm 0.51	3.17 \pm 0.48	$P < 0.001^*$	0.497	$P < 0.001^*$
AE	3.05 \pm 0.90	2.95 \pm 0.45	2.84 \pm 0.48	0.046*	0.001*	$P < 0.001^*$
RR	3.32 \pm 0.54	2.76 \pm 0.31	2.86 \pm 0.30	$P < 0.001^*$	0.001*	$P < 0.001^*$
MP	3.34 \pm 0.55	2.95 \pm 0.35	3.21 \pm 0.42	$P < 0.001^*$	$P < 0.001^*$	0.006*

SE: Social Experience; HF: Health and Fitness; TE: Thrills and Excitement; AE: Aesthetic Experience; RR: Recreation and Relaxation; MP: Meeting a Physical Challenge

* represents a statistical significance ($P < 0.05$)

4. Discussion

The aim of the study was to obtain empirical data on the attitude of students from high school, orientation-year and college levels at KFUPM campus through the provision of questionnaires. Each aspect of physical activity was ranked differently by the students of each level, and high school students showed positive attitudes in all aspects of physical activity.

Among the KFUPM high school students (age 16-18), the top two aspects/reasons that they reported supporting a positive attitude toward physical activity were “health and fitness” and “social experience”, respectively. This result was moderately different from previous work by Pethkar et al.¹⁵, who reported that male Indian high school students had the most positive attitude towards physical activity in the “meeting a physical challenge” aspect, followed by the “social experience” aspect¹⁵. Thus,

these results suggest that KFUPM high school students typically put the highest value on the health, fitness and physical challenge characteristics of physical activity, versus social interaction and other aspects.

The ranking in positive attitudes showed that the KFUPM high school students placed the “meeting physical challenges” aspect, and the “relaxation and recreation” aspect at fourth and fifth place respectively, out of six total aspects. A possible reason for this is that the KFUPM high school students in this study might have received little encouragement from their parents to engage in physical activity for those aspects. In support of this speculation, Masià et al.²⁰ reported that parents’ attitude towards physical activity, either positive or negative, can affect their children’s attitude towards physical activity in the same way²⁰. Because most of the parents of high school students in this study are faculty, they may have placed more importance on good grades from their children’s

Table 2. Ranking of each aspect for each level

Aspect	High School (n = 297)		Orientation year (n = 300)		College (n = 299)	
	Percentage of participants with positive attitude (%)	Ranking	Percentage of participants with positive attitude (%)	Ranking	Percentage of participants with positive attitude (%)	Ranking
SE	75.1	2	28.0	5	38.8	4
HF	83.8	1	66.0	1	47.8	3
TE	71.7	3	59.3	2	58.9	2
AE	48.5	6	37.0	3	31.4	5
RR	66.7	5	15.7	6	23.4	6
MP	68.4	4	34.0	4	61.2	1

SE: Social Experience; HF: Health and Fitness; TE: Thrills and Excitement; AE: Aesthetic Experience; RR: Recreation and Relaxation; MP: Meeting a Physical Challenge

studies, and consequently might have considered physical activity as a negative interference with their child's academic performance.

The KFUPM high school students in this study ranked the "aesthetic experience" last. This finding is in agreement with previous research on high school students using similar methodology¹⁵. This was not surprising, given that the KFUPM physical education curriculum does not consider the aesthetic aspect of physical activity to be an important priority for Saudi students.

For the KFUPM orientation-year students in this study, "health and fitness" was the top-ranked aspect for a positive attitude toward physical activity, which was in general agreement with previous research among students of similar age and educational level²¹⁻²³. In contrast, for the KFUPM college students of this study, "meeting a physical challenge" was the top-ranked aspect, which was dissimilar to earlier published findings on university students²¹⁻²³. Therefore, the results suggest that Saudi orientation-year students primarily value physical activity for health and fitness reasons, while college students primarily value physical activity to meet physical challenges. In addition, both orientation-year and college students placed the "thrills and excitement" aspect in the second place, with no observable statistical difference in the mean per item. This suggests that both groups of students considered this aspect of physical activity at the same level of importance. Both the orientation-year and college students of this study, as well as the university students in Khan et al.²² had a positive attitude towards the "thrills and excitement" aspect of physical activity. A possible reason for this attitude in orientation-year students is that most might have come from backgrounds which do not encourage physical activity, making trying new things a motivator for them. As for college students, trying new things was reflected in their own choosing of new physical exercises and activities within their KFUPM physical education course. The KFUPM college students ranked the "health and fitness" aspect third, and showed a positive attitude towards this aspect. This means the college students positively value the health and fitness aspect of physical activity.

KFUPM orientation-year and college participants of this study had a neutral attitude towards the "relaxation and recreation" aspect, which is in contrast to Kamarudin and Omar-Fauzee²¹ who reported that male Malaysian university students (mean age = 20.85 years) had a

positive attitude towards this aspect²¹. The authors²¹ stated that the participants in their study wanted to reduce the stress which came from their challenging academic load. A possible reason for the difference in "relaxation and recreation" in this study versus Kamarudin and Omar-Fauzee²¹ is that the participants of this study had other means of relaxation and recreation which they preferred over physical activity. Both KFUPM orientation-year and college students also showed a neutral attitude on the "social experience" aspect, which is different from the male Pakistani university students investigated by Khan et al.²² who indicated that they had a positive attitude toward the "social experience" aspect of physical activity. Both KFUPM orientation-year and college students also showed neutral attitudes on the "aesthetic experience". KFUPM orientation-year students ranked the "aesthetic experience" third, while KFUPM college students ranked it fifth. This result was not surprising for the college students. However, it was surprising to see that the orientation-year students ranked aesthetic experience third, as their physical education curriculum does not focus on this aspect of physical activity.

KFUPM high school students had a "more-positive" attitude toward physical activity in all six measured aspects than the KFUPM orientation-year students ($P < 0.05$) and the KFUPM college students ($P < 0.05$). A possible reason for this was the background of the different student groups. For example, the KFUPM high school students were generally encouraged to participate in physical activity by their instructors, while some of the KFUPM orientation-year and college students came from out of campus, and therefore were not present on campus to receive the same level of encouragement from the KFUPM physical education instructors. Another possible reason for this might have been the course load of the orientation-year and college students, which might have required them to devote significantly more time to academic requirements versus physical activity. This point deserves further study.

4.1 Limitations

A limitation of the study was that all the participants were male students, and were from KFUPM campus. It is recommended that studies on attitude are conducted with students in other provinces in Saudi Arabia. Another limitation was that it was not known how many students

took physical education as their only source of physical activity. Moreover, data concerning academic and family backgrounds and the academic and health lifestyle of the participants like how often they engage in physical activity were not obtained; meaning that the impact of their background and lifestyle on their attitudes was not known with certainty.

4.2 Health Implications

The study showed that students at different academic levels have different attitudes to physical activity. High school students of the KFUPM campus had higher positive attitudes on all aspects of physical activity than the university level participants, suggesting that they were more likely than university level students to engage in physical activity. This is backed by evidence which shows that high school students with negative and neutral attitudes did not participate regularly in physical activity⁶. This means high school students were more likely to obtain the health benefits of participating in physical activity than the university students. Based on the neutral attitudes of orientation year participants towards physical activity, this study also shows the possibility of high school students reducing their time spent in engaging in physical activity when they enter the university level, which might have negative effects on their health. These issues need to be considered by parents, physical educators, school committees and public health committees.

4.3 Recommendations

Given that the participants were from all the Saudi provinces, the following recommendations based on this study might be beneficial to Saudi youths to improve their attitude towards physical activity:

- High school students should be encouraged by school boards and parents to maintain their positive attitude towards physical activity before they are admitted into any university. This is to prevent the chance of their attitudes becoming neutral or negative after university admission, which will most likely negatively affect their health behavior and health.
- The positive attitudes of orientation students in the “health and fitness”, and “thrills and excitement” aspects, and that of college students in the “health and fitness”, “thrills and excitement”, and “meeting a physical challenge” aspects should also be encouraged by the university health community to be maintained

by the students.

- Orientation students did not show positive attitudes in the “social experience”, “aesthetic experience”, “recreation and relaxation”, and “meeting a physical challenge” aspects, while college participants did not show positive attitudes in the “social experience”, “aesthetic experience”, and “recreation and relaxation” aspects. To change these to positive, the university health community and the national public health committee should provide support by designing curricula which deal with their neutral attitudes, and increasing their awareness of the positive effects of having a positive attitude towards physical activity in those aspects.
- Extracurricular activities like inter-class competitions or national university games can be organized regularly by the university so as to encourage students in participating in physical activity, which will help develop positive attitudes towards physical activity.

5. Conclusion

High school students of KFUPM campus had a more overall positive attitude towards physical activity than the university students. Having such answers can help physical educators and public health committees construct programs which encourage physical activity for the students. This is of great importance in case some students consider their physical education course as their only means of physical activity. Such answers can also help parents to encourage their children to be physically active.

6. Disclosure Statement

None declared.

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